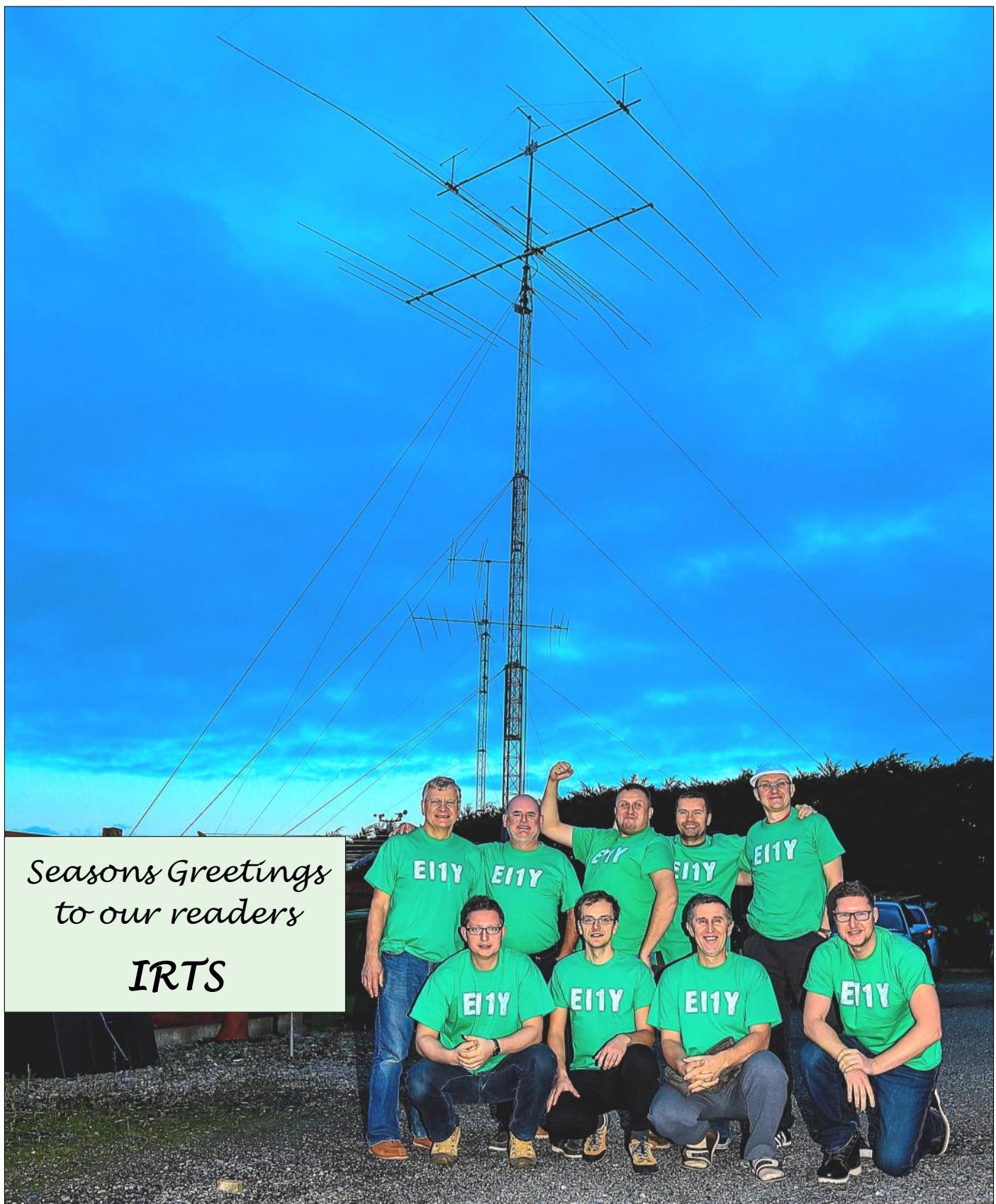


# ECHO IRELAND

IRISH RADIO TRANSMITTERS SOCIETY

December 2015 - 83 YEARS



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Brian Canning EI8IU

Larry McGriskin EI9CN

Pat O'Connor EI9HX

## *A Seasonal Message from our President ...*

It's that time of the year again when we take stock and reflect on a year gone by. It seems to come around more quickly each year and you wonder where the time went! I have only just got around to emptying the last of the boxes since my return from my time away signing 7P8CC and much to my surprise it seems the boxes related to the shack contents were at the bottom of the priority opening list. In any event I am happy that EI8CC is well and truly QRV again and I look forward to meeting many of you again on the air over the coming months and years.

On that note I would hope that we would all make an extra effort to utilise the very valuable resource that is the radio frequency spectrum and so enjoy and promote the wonderful hobby that is amateur radio. In my letter to President Michael D. Higgins earlier this year I outlined the long history of amateur radio in Ireland and the dual service our hobby provides both to science and to the community. I was pleased, as I am sure all members were, that the President readily agreed to become our Patron. This will undoubtedly enhance our standing as a society both at home and internationally. It is incumbent on all of us to ensure that the hobby endures and remains relevant. The best way to do this is to use our frequency allocations that we have the privilege of having access to. As the rugby referee might say to a team – “use it or lose it”.

I hope that during my time as President I will be able to visit the clubs around the country and get to meet many of the licensed and SWL members. Clubs are hugely important cogs in the wheel of amateur activities. They make a significant contribution, particularly in the areas of assisting aspiring licencees and conducting group activities.

I would like to thank all those who have contributed so much, all in a voluntary capacity, to the furtherance of the aims of the society and promotion of the hobby. Seamus EI8BP handed over the Presidency to me this year and in doing so I inherited a vibrant and efficiently run society, thanks in no small way to his unstinting efforts over the last three years. He continues to work assiduously on our behalf on many tasks for which I for one am truly grateful. I want to say thanks also to all of the society officers, committee members, sub-committee members and the various managers, including of course QSL managers, all of whom work tirelessly on our behalf. A special word of thanks goes to those who bring us the news bulletins and publications. We owe you all our sincere thanks.

Finally I want to take this opportunity to wish all members a happy and peaceful Christmas and a prosperous New Year – filled with good DX.

Gerry EI8CC, IRTS President



## **IRTS Regional Representatives**

Regional Representatives act as liaison between members/clubs in their respective regions and the IRTS Committee.  
Feel free to contact them if you have any issue to raise or suggestion to make about IRTS or its activities.

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# News from around the Clubs

## Mayo Radio Experimenters Network

### Brendan Minish EI6IZ

The Mayo Radio Experimenters held their annual AGM on Wednesday evening 7th October at 9.30pm in the Welcome Inn Hotel, Castlebar. There was a good attendance on the night. The outgoing chairman Padraic Baynes EI9JA thanked everybody who attended meetings and activities and helped out at all the events over the last year.

Secretary Brendan Minish EI6IZ reported on correspondence with the IRTS and other business. He also reported on his handling of all QSL cards going to and fro - from the club's activities over the past year. Treasurer Adrian Healy EI2HAB, gave a report on all the club's expenditure for the year.

The assembled meeting discussed possible club activities for the forthcoming year. However, no firm decisions were made and final decisions will be made nearer to the dates.

The new committee elected for the coming year are:

Chairman: Jimmy Kelly EI2GCB  
Secretary: Brendan Minish EI6IZ  
Treasurer: Adrian Healy EI2HAB  
PRO: John O Grady EI8GIB  
IRTS Rep: Gerry Clegg EI4GD  
Rally Director: Padraic Baynes EI9JA  
QSL Manager: Brendan Minish EI6IZ

## Cork Radio Club

### Dave Moore EI4BZ

Cork Radio Club members enjoyed a great days outing on Wednesday last to the RTE installations at Clarkstown, Co. Meath and the old transmitters hall in Athlone.

The tour was led by John Hearne EI2FG and a group of seventeen first gathered at the RTE long wave transmitter site at Clarkstown, Co. Meath. They viewed the longwave transmitter and the 248 metre giant 3-sided mast and associated unique feed line before heading for lunch at the Creggan Court Hotel in Athlone.

Here the group were joined by further guests before heading to Moydrum on the outskirts of Athlone to visit the famous and unique transmitter hall that has three generations of broadcast transmitters still intact. The station was built to broadcast the Eucharist Congress of 1932 and the Marconi Company got the contract to design, build and install the 60kw transmitter.

A new 100kw transmitter was installed in 1953 and another new transmitter was installed in 1979 for the launch of RTE Radio 2. The Cork Club would like to thank all who made the trip, especially our Dublin and Mullingar visitors and a special thanks to John EI2FG for facilitating and leading this unique and educational trip.

## Dundalk Amateur Radio Society

### Brian Whelan EI8EJB

Tony, EI4DIB, will read the IRTS Radio News every Monday night at 8pm on 145.4000MHz FM simplex from his QTH in Drogheda, Co. Louth. Tony would appreciate it if listeners would call in to EI0IRTS with reception reports after the bulletin has been read.

## North Cork Radio Group

### Lisa Collins EI9GSB

The North Cork Radio Group would like to advise that the Seefin Mountain repeater (SMR) is back on the air. News is read every Tuesday evening at 8.30pm and we welcome any reception reports. The frequency is 430.925MHz.

## South Dublin Radio Club

### Tony Doyle EI7GUB

The South Dublin Radio Club has been very active since resuming meetings. A change has occurred this year with our Tuesday meetings in that we now meet from 8.30 pm to 10.30pm. In addition to running the SDR net every Sunday (see separate report in this edition of Echo Ireland) the club has recommenced its radio exam classes after a lapse of a few years.

The classes are under the guidance of Phillip EI8JT and there are eight students participating. The club would like to take this opportunity to thank Michael EI2GKB who ran the classes for a number of years for the high standard he set and in guiding so many club members through the HAREC syllabus and in obtaining their license. A club needs an inflow of new blood and the exam class is a crucial element for attracting new members into our hobby and club.

In mid-September John EI7BV gave a demonstration how easy it is to receive the FM satellites such as SO-50. In early October following the launch of the Fox-1A satellite (now AO-85) he also gave an informal talk on preparing for and tracking a new satellite. He outlined the process he followed to get the necessary Keplers before launch and immediately after launch, but in advance of their appearance on the standard websites such as "Celestrak" etc. The success of his approach showed in that he received Fox-1A (AO-85) late on the evening of the launch day when it was on its fifth orbit and before it was heard in the US. Using orbit prediction programmes he was able to demonstrate the difference in the predicted paths of the satellite using the preliminary Keplers provided before the launch and the set of Keplers provided shortly after the launch. In all, the time difference was around a quarter of an hour.



*Participants in the Radio Theory Classes 2015 for SDR*

In October, Joe EI6EG gave a demonstration on making a 4:1 balun for use with a HF doublet. Following the construction and tidying up he subsequently held a raffle among the members present for it.

At the end of August a number of members participated in the IRTS 2-Metre Counties Contest. However special mention must go to Niall EI6HIB, who although only licensed in June, was very successful in the contest. Operating from Kippure Co. Wicklow, he succeeded in coming first in the “FM only Single Operator Section”.

His success showed that you do not have to be an old hand at contesting, but rather with carefully planning and implementation anyone can score well and be successful. Congratulations Niall!

## **SDR Net Third Anniversary**

### **John Breen EI7BV**

This month the SDR net celebrates its third anniversary. Little did the initiators (John EI7BV, Tony EI7GUB, Tom EI7HT and Joe EI6EG) think that it would last as long as it has or that it would become such a popular place on the 40m band for EI activity and a friendly ragchew.

In the last year there was over 400 net participants throughout the year with seventeen SDR members participating, some of them up to forty times. Over thirty other EIs participated during the year, some of them up to ten times, though the prolonged summer doldrums did not help non-Dublin participation for a considerable part of the time. Six from GI, and a small number from across the water in G, GW and GM also called in.

A major change was made to the Net during the year. Originally it was on 7.110 MHz following the call-ins to the 40m IRTS news. This led to an uncertainty on the time and frequency for the net to start as it was often dependent on the number of call-ins as well as finding a clear channel in the middle of the morning. However early in the year following a discussion among the SDR participants and with Séán EI7CD, the 40m newsreader, it was decided to change to 7.123 MHz and be active before the news. In this way the net would help to pre-occupy the frequency ahead of the news at 11.00 or as some say “keeping the frequency warm! While the net is scheduled to run from 10.00 to 11.00 it often starts

earlier. This change has proved very successful not only in keeping the frequency clear but, as the figures above show, in increasing the participation particularly from EI station around the country. It also gives Séán, before he reads the news, a good indication of band conditions and the likely spread of call-ins.

All EIs and GIs are welcome to call-in and as indicated above, a good number do so. Whether it is for a ragchew, checking a new or reconfigured antenna, microphone or rig, the net is there to facilitate. Thanks to who participated during the year. Happy Christmas and a prosperous New Year to you all and hope to hear all in 2016.

## **Shannon Basin Radio Club**

### **Brian Canning EI8IU**

Shannon Basin Radio Club participated in the Autumn 2 meters Counties Contest. Brian EI8IU and Junior Op James headed for Cairn Hill in Longford (278 m asl). Equipment used was an Icom IC910 running at 50w and a 2m colinear vertical antenna.

After some initial problems the station operated well and after the two hours we were satisfied with our QSO and county count with contacts ranging from Antrim to Kerry and Galway to Dublin.



*Shannon Basin Radio Club using their callsign EI3Z/P in the 2015 SSB field day in Garbally College, Ballinasloe.*

In September the club headed for Garbally in Ballinasloe to participate in the SSB Field Day. It was decided to take part in the six hour section. Equipment used was an Icom 7400 and Zeppelin antenna. (Thanks to Enda EI2II for providing the accommodation). Band conditions were fair but a satisfactory amount of QSOs were logged. During the contest we were visited by Fr. Alan EI3CG and also John EI6DY.



*Junior op*

## Kerry Amateur Radio Group

Declan Horan EI9FVB



Members of KARG recently paid a visit to the Marine Rescue Sub Centre station at Valentia, where the latest technology in search and rescue was displayed, as well the various communication technologies at their disposal. Discussions were had on various rescues where the latest communication technologies proved vital to saving lives. ICG information packs and souvenir wristbands were presented to the younger members of the visiting group, which were later distributed to school classmates. This visit proved very educational, and we would like to thank Irish Coast Guard officers present for hosting our visit.

The MRSC at Valentia earlier this year marked its Centenary, where the sinking of the *Lusitania*, the bombing of Air India flight 182 and the 1979 Fastnet race are among many incidents which were remembered.

[www.valentiaisland.ie/life-business/history-culture/valentia-radio/](http://www.valentiaisland.ie/life-business/history-culture/valentia-radio/)

The KARG will hold its Christmas lunch on Sat 5<sup>th</sup> Dec at 12 noon at the garden Restaurant, Muckross House, Killarney. This lunch will round up 2015 activities, and one lucky member will win a new Baofeng UV-5R, as part of the KARG Christmas raffle. Once again, KARG would like to say a huge "Thanks" to all that participated in KARG events during 2015 and we welcome new members at any time. A programme of events is already under discussion for 2016, and will be published in due course.

As 2016 dawns upon us, KARG look forward to hearing you all in the annual IRTS 80m Counties contest, and many more events throughout the year ahead.

**Kerryamateurradiogroup.com**

## IRTS Technical Panel - a service to our members

The IRTS Technical Panel is a group of volunteers who have expertise in, or experience of, different aspects of amateur radio. Our aim is to help radio amateurs with technical or operational problems.

### What types of problems do we handle?

We don't have a definitive list; however, here are some of the issues that we would have some expertise in:-

- Antennas (e.g. best antenna for a given location, matching antennas to rigs)
- Station operation (e.g. TVI, RF in the shack)
- Sourcing components (e.g. "where can I get toroids?")
- IT issues (logging programs, rig interfacing, LOTW uploads)

### How do I ask a question?

Send your question to [irtstech@irts.ie](mailto:irtstech@irts.ie)

Provide as much information as possible, including details of attempts already made to deal with the issue in question.

### How do I get an answer?

Your query via [irtstech@irts.ie](mailto:irtstech@irts.ie) will be distributed to all the members of the Technical Panel and their responses will be emailed to you.

### The Future ...

In time we plan to compile a database of questions and answers from our correspondence. This database could be the first port of call in resolving a query.

### Who is on the technical panel?

Good question ... maybe you? We always need more volunteers; if you can help, please send your details to [irtstech@irts.ie](mailto:irtstech@irts.ie)

### Disclaimer

This is a free service for the amateur radio community provided on a voluntary basis by members of the amateur radio community. We will do our best to supply full and accurate answers to queries, but we are not in a position to provide guarantees with or about our suggested solutions.

*Jim Holohan EI4HH  
is the co-ordinator of the Technical Panel.*



# Railways On The Air 2015

**EI2WSR**

*Sean Byrne EI2HZA*



The 2015 annual Railways On The Air (ROTA) weekend took place over the weekend of the 26/27<sup>th</sup> September. This event usually takes place every year on the weekend closest to the 27th September, celebrating the anniversary of the first steam powered passenger railway in 1825 - on a line from Darlington to Stockton in the north-east of England. The event is coordinated by the Bishop Auckland Amateur Radio Club, based in Durham.

For more information on this event

<http://rota.barac.org.uk>



*EI2WSVR-The Waterford & Suir Valley Railway,  
Kilmeaden, Co. Waterford*

The South Eastern Amateur Radio Group were active as EI2WSVR for the annual ROTA from the Waterford & Suir Valley Railway in Kilmeaden, Co. Waterford - a community heritage project. The project has enabled the magic of rail's golden age to be brought to life in Kilmeaden. A narrow-gauge railway runs along 17 kilometres of the abandoned Waterford to Dungarvan line with spectacular views. The railway is currently operated by a volunteer crew. It opens from April to the 30th September for the summer season. It is popular with both locals and tourists and appeals to people of all ages.

[www.wsvrailway.ie](http://www.wsvrailway.ie)

The 40m band conditions proved to be great on Sunday too, with many pile ups being worked throughout the day until we went QRT on Sunday afternoon. Throughout the weekend we had many visitors to the station including some club members and people who wish to obtain a license along with members of the public who found the radio station in operation fascinating. So all in all ROTA 2015 was a great success for the South Eastern Amateur Radio Group. SEARG would like to thank Maria Kyte manager of the Waterford & Suir Valley Railway and all the staff members for the help and assistance they provide to SEARG to allow the group to use the railway for the Railways On The Air event and other activations from there each year. We look forward to activating EI2WSVR in 2016.



*SEARG treasurer Mark Wall EI7IS presents a certificate to  
Maria Kyte, manager of the Waterford & Suir Valley  
Railway, to mark the railway's participation in ROTA 2014*

## EI0YOTA

Operators in EI who would like to help activate EI0YOTA for the month of December are asked to contact Ger McNamara, EI4GXB [ei4gxb@gmail.com](mailto:ei4gxb@gmail.com) or 087 2532512.

Details of the Youngsters On The Air activity month can be found at <http://www.ham-yota.com/december-yota-month/>

## IRTS Radio News Service

Items for inclusion in the IRTS Radio News or Echo Ireland can be sent to

**newsteam@irts.ie**

Deadline for inclusion in the Sunday news bulletin is 1200 on Thursday.

Urgent items can be telephoned to the Editor,

**Aidan EI7JC on 085-7100511**

## Attention Club Secretaries

Is your club listing on the IRTS website up to date? Check [www.irts.ie/clubs](http://www.irts.ie/clubs) and email [pagemaster@irts.ie](mailto:pagemaster@irts.ie) with any changes you want to make. It is important that prospective members and visitors can obtain contact and meeting information.



## Excerpts from the HX files with Pat Fitzpatrick EI2HX - Excerpt 033

Hello and welcome to Xtract 033 of the HX files.

This issue features a dual-band transceiver (23cms and 13cms). It was going to be a smallish unit (and a mono bander) but as I was putting the parts together and starting to add more bits to the project the original box quickly ran out of space.

The one I finally used had no front panel on it but I had a piece of metal that I only had to shorten a small bit. As the piece of metal was made of stainless steel (although you would not think so by all the paw marks on it) it was not the easiest to drill. Having to cut out and file the front panel took a bit of time to do. When not in use the monitor is folded away. Not shown in the photo is a chrome frame that finishes it off. The frequency displays had their own frames and they were easy to fit as they had a raised lip on them and were proud of the panel and were just a simple click into place, but not so the monitor, as that took a lot of filling to make it fit.

Anyway back to the start - as usual a template was made, this one out of corrugated cardboard. When it came to the a monitor there was a choice, a four inch one that required a square hole or a seven inch one that required a rectangle one. As there was plenty of room in the project box the larger one was used, as can be seen in photo 1 (before the 13 cms switches and display were added) and folded away.



Photo 1

Photo 2 gives the finished look. Not being a pessimist, should anything happen to the monitor a different size will be used, as this one was bought at the right price and a direct replacement would cost too much. The monitor unit also has a radio built into it which is handy when the bands are quiet.



Photo 2

A piece of aluminium is now in stock if any major work has to be done to the front.

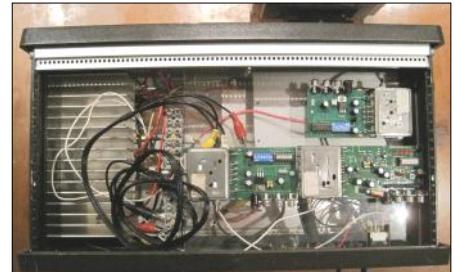


Photo 5



Photo 3

In photo 3 you can see the monitor casing, a 5 watt driver amp and, under and attached to the heat sink, a 50 watt amp for 23cms. A piece of perspex was used to make a platform to attach the TX/RX boards, photo 4. Some threaded bar was used to make a raised platform for the transmitting and receiving boards, as the project case was more than tall enough to accommodate them.

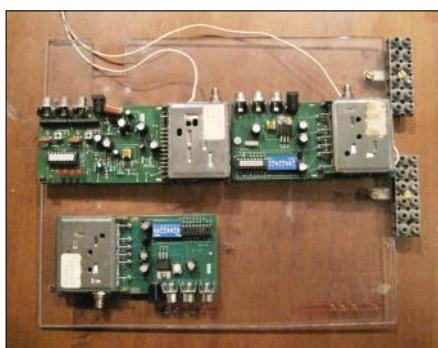


Photo 4

In Photo 5 the 13cms TX and RX boards are the bottom two boards, and under them although not visible is a small 5 watt amp; this will be enough for the moment, there is a 25 watt one but the heat sink is being changed for a larger one. The heat sinks will keep everything running within the amp's specifications but a fan will be added to the vent on the back of the project box to shift the air around.



Photo 6

Photo 6 is a shot of the back of the unit well on the way to being finished. The multi-phono sockets for the audio and video can be seen on the bottom right of the photo, and in use to complement the internal monitor an external one can be added so both bands can be used at the same time either as receiving or transmitting, and by reconnecting some of the phono leads the choice of in on one frequency and out on the other.

When it came to doing the wiring plan "A" was quickly dismissed, that plan was to hide as much of the cables and leads as could be hidden, but as some of parts were so close to each other and by the time the leads were hidden and then reappeared it would use longer cables and leads and more holes drilled into the base of the unit, and put unnecessary strain on the coaxial cables.

In use the unit is connected to an external power supply, but there is a switch mode power supply in stock that if removed from its enclosure could be fitted by moving a couple of small items - an "upgrade" to do over the dark nights!



Photo 6

That is it for this issue of the HX Files and for 2015, so a happy Christmas to you all, and see you in the New Year.

May your signals be P5.

73 Pat.



# www.irts.ie

## Joe Ryan EI7GY



The design and page layout of the IRTS website www.irts.ie has now been updated to make it compatible with smartphones and tablet computers as well as laptops and desktop PCs. Currently, almost 30% of visitors to the IRTS site (compared with just 9% three years ago) are using small handheld devices that require a fluid and adaptable page layout. The picture on the right shows how the new IRTS web site looks on a mobile phone, while the picture below shows the layout on a typical desktop.

The website has evolved since its early days as is evident from the thumbnails on the left showing changes from 2005 to 2014. The site relies heavily on input from members, particularly clubs, for contact notifications, rally information and repeater updates.

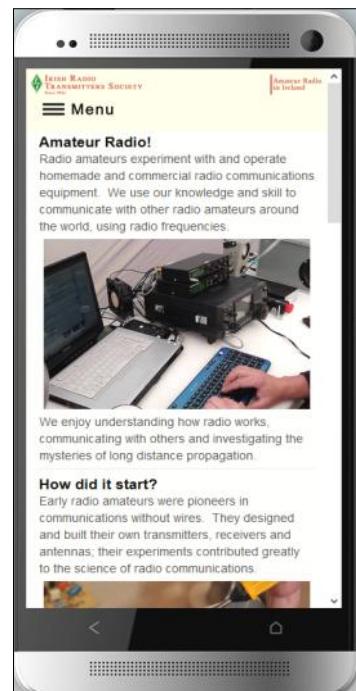
Items and updates for the website should be sent to pagemaster@irts.ie

Of visitors to irts.ie ...

- \* 69% are from EI
- \* 5% are from GI, 8% from Britain
- \* 8% are from the USA

Most-visited pages (apart from the Home Page) ...

- \* This Week's News
- \* Voice Repeaters in Ireland
- \* EI Call Listings



## IRISH RADIO TRANSMITTERS SOCIETY

Since 1932

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### Amateur Radio!

Radio amateurs experiment with and operate homemade and commercial radio communications equipment. We use our knowledge and skill to communicate with other radio amateurs around the world, using radio frequencies.

### How did it start?

Early radio amateurs were pioneers in communications without wires. They designed and built their own transmitters, receivers and antennas; their experiments contributed greatly to the science of radio communications.

### What does IRTS do?

IRTS is the national society for radio amateurs and experimenters in Ireland. Its purpose is to promote the study of radio communications, to encourage radio experimentation and to provide services to its members.



We enjoy understanding how radio works, communicating with others and investigating the mysteries of long distance propagation.

Amateur radio in Ireland goes back to experiments in radio transmission and reception carried out in Baltinglass, Co. Wicklow in 1898.

IRTS also represents the interests of members nationally and internationally. Membership of IRTS is open to anyone interested in radio communications.

*There is no better way of participating fully in the amateur radio hobby than joining IRTS. If you want to know more about our activities, have a look around our web site and talk to some of our members. Details of how to join, along with options for payment, are on the [Join Us!](#) page.*

 IRTS is the member for Ireland of the International Amateur Radio Union ([IARU](#)), which has over 160 national amateur radio societies as members and represents the interests of the Amateur Radio Service worldwide.

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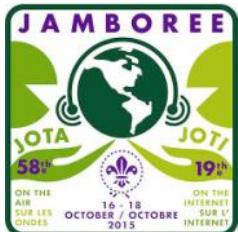
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# JOTA - Jamboree on the Air



## Rathcormac Scout Group

The Raathcormac Scout Group were active for Jamboree 2015 using the callsign EI1E, and hosted by the Avondhu Radio Club in Rathcormac.

The scouts were split into groups of five or six and each scout had one or more SSB QSO with other stations, some of which were also Jamboree stations. In all, fifty-five other stations were logged in two continents and eighteen countries. All activity was on 20m.

After each group was finished, an important task of writing a QSL card was completed by each participant, confirming their QSO. Special thanks to scout leaders David Kent and Michael O'Donovan. David and Micheal also gave it a go. Feedback received after the event was good. Indications are a radio station is definitely needed for 2016 Jamboree.



Ava Hallinan, Alanna Broderick, Leah Hallihan, Gerard EI5KF & Olivia Beausang (on radio)

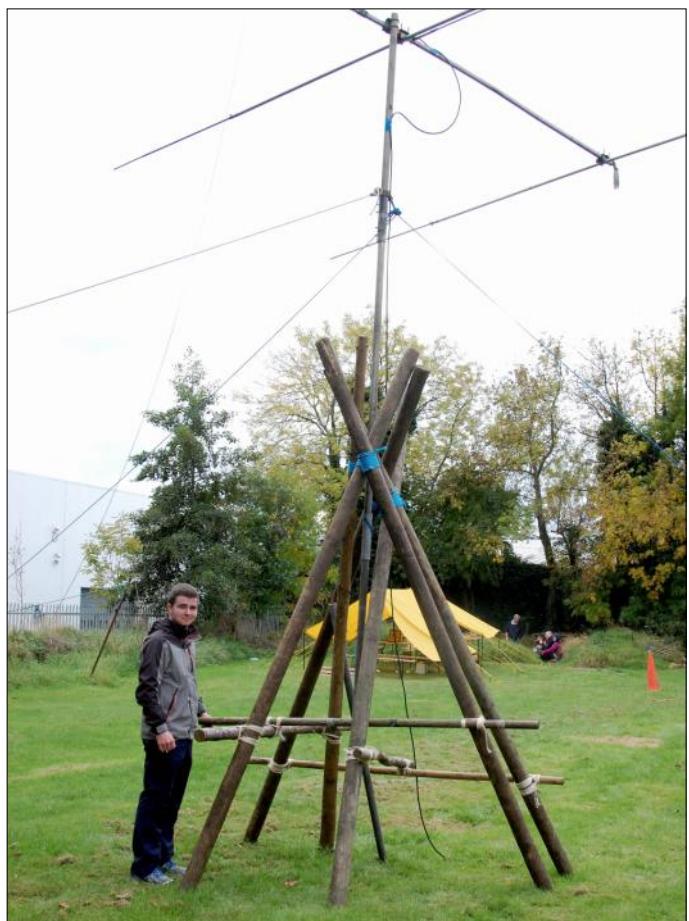
## Meath Scout Group

Forty scouts from various units in Meath took part in JOTA, operating from the Scout Den in Navan.

The scouts built a timber tower to support the 15m 3-element beam which performed well with excellent contacts with scout stations in West Africa and South America. Rotation was by the “Armstrong” method,

Other activities on site included electronic kit building and direction finding. The inevitable Skype terminals were in evidence but certainly did not match the amateur radio station for interest and enthusiasm.

The station call sign was EI1DD operated by Séamus EI8BP, Niall EI6HIB and Paul EI2CA.



Niall EI6HIB is about to turn the beam



Gerard EI5KF with Fiona Barry



Paul EI2CA supervises a QSO

## Silent Key Alfie EI3BQB



The death has occurred of well-known DX'er and 80m stalwart Alfie Coyle EI3BQB, and former Chairman of TARG, occurred suddenly on Friday the 9<sup>th</sup> of October 2015. He is survived by his wife Teresa, four children Steve, Santina, Nicola and Amanda.

Alfie who was originally from Castlederg, Co Tyrone lived in Crossroads and Killygordan, Co Donegal before he moved to Cashel in Co Tipperary with his family in 1987.

He got his licence and call sign EI3BQB in 1984 when he was a member of the DARC (Donegal Amateur Radio Club). Alfie was a founding member of Tipperary Amateur Radio Group, formed in Grant's Hotel, Cashel on the 19<sup>th</sup> of October 1994. He was elected as the group's first chairman on the original committee and was very proactive in organising group activities in its early years.

*May he rest in peace*

## Coolmine Rally

organised by  
Phoenix Amateur Radio Club

## Coolmine Community School

Grove Road, Dublin D15 FW97

**Sunday 14th February 2016**

Doors open 10am

Contact for enquiries, tables, etc.  
**Tony 087 2439997**

## Silent Key Pat EI8H



The death has occurred of well-known DX'er and 80m stalwart Pat Fagan EI8H, on Friday 18<sup>th</sup> September 2015. To his sons Eoin EI9O and Ciarán EI3GTB and his entire family, we extend our deepest condolences.

*May he rest in peace*



Peter EI2IU, Phil EI9P,  
Ronnie EI9ED, George EI6S  
remember Pat EI8H

## Promote Amateur Radio Fund

In order to promote Amateur Radio to the public, the Committee will consider the awarding of a number of grants to Affiliated Clubs. These grants will primarily be funded by a kind donation by the late John O'Riordan EI6IJ.

The grants will be approximately €300, usually not exceeding a total of €1,000 in any one year, and are to assist with the mounting of public special event stations by clubs affiliated to IRTS. The stations should have significant public exposure with the specific intention of demonstrating amateur radio to members of the public. The funds may be allocated in one or more grants, or not at all, depending on the nature of applications received.

Applications to be made in writing using the application form which can be downloaded from the IRTS Website to the Secretary of the Society for consideration by the Committee.

## Silent Key Bernard EI6CF



The death has occurred of Bernard O'Connell EI6CF on 29<sup>th</sup> November 2015. He was laid to rest in Castlemungret Cemetery, Mungret, Co. Limerick.

To his son Ian and daughter Helen, his sister Rena, brothers Gerard and John, and his extended family, we extend our deepest condolences

*May he rest in peace*

## When is my membership due for renewal?

Your membership renewal date is shown on the wrapper in which the newsletter is posted – above the name and address. For those who receive Echo Ireland by electronic distribution, the renewal date is included in the email alert sent when a new issue is published.

Members who pay by direct debit will see "(DD)" after the renewal date.

Use [www.irts.ie/renew](http://www.irts.ie/renew) to renew your membership at any time by PayPal or Credit/Debit card; you can also renew at a Rally, or by sending your annual subscription directly to the IRTS Treasurer.

Please renew early to keep our postage and other costs down.

Membership is extended by 12 months from the normal renewal date whenever a payment is received.

**Dave O'Connor EI6AL**  
[memrecords@irts.ie](mailto:memrecords@irts.ie)



# SOTA Activation – Ham Life beyond the Shack

## John Smyth EI3KA

When I sat down to write an article for Echo Ireland on my SOTA (Summits on the Air) activities, I initially thought I didn't have much of interest to say. I don't pretend to be an expert on the subject. I'm a recent convert to this branch of the hobby and I'm still learning the ropes, making the usual rookie mistakes. So I don't plan to make this article a beginner's guide to SOTA activation – there are many references on-line which perform that function far better than I could. Rather, I'd like to use this article to do two things – to share my experiences of the technical and practical issues faced by the activator, and to encourage others who may not have considered it to give it a try.

To summarise the SOTA programme as briefly as possible: it is all about battery-powered portable operation from designated hilltops, which are 'activated' for SOTA purposes by making a minimum of four simplex QSOs with any licensee anywhere, on any band, in any mode. SOTA points are earned as activators (out on the hill tops) or as chasers (anywhere else) trying to contact the activators. This article is written from the perspective of the aspiring activator.

What attracts me to it? After five years spent chasing DX on HF and 6m from a comfy shack, I was looking for a new challenge. Although I have a competitive setup and was reasonably successful on the bands, I started to get a bit bored with the pileup arms race (I didn't bother at all with Navassa). I needed something new to rekindle my interest. As a keen walker, it seemed to me that SOTA might, literally get me out of my comfort zone.

The first practical constraint is that SOTA is, by and large, a QRP activity. Many activators operate at higher power (the Yaesu FT-857D is popular) but most exchanges use 10W or less. The simplest way to activate a summit is with a 2m/70cm FM handheld, but here in the west of Ireland, you would be lucky to make the requisite four QSOs by relying on a handheld alone. If you've huffed and puffed your way to a 600m summit, you want to be quite sure that you are going to get the credit for it! Therefore, HF is most commonly used. CW is probably the most reliable mode but SSB is also very popular and, to date, this is what I have been using.

The choice of transceiver depends on your particular taste. CW aficionados probably have a greater choice of lightweight QRP equipment to choose from, whereas the most common multimode rigs are the Yaesu FT-817, Elecraft KX3 and the discontinued Icom IC-703+. For me the choice was between the 817 and the 703. Fine rig no doubt the KX3 is, as a mechanical engineer, the Elecraft doesn't inspire me with confidence in its robustness for long-term portable use. The 703 fits the bill nicely for me – heavy, but tough as old boots. Although HF/6m only, it has slightly more power, a better receiver and TX audio than the 817, as well as a built-in ATU.

Wire antennas supported by lightweight telescopic fibreglass poles are typically used for portable HF use. I have



*Working a Pileup with Family Assistance on Croghanmoira*

experimented with coax fed resonant inverted-vee dipoles, ladder-line fed doublets and loops, but I've found the simplest HF portable antenna to erect on a windy hilltop is an end fed half wave (EFHW). The advantage of the EFHW is that, when supported in the middle, the wire needs to be tied off at one end only and a very short feeder can be used. Recently, I have been using the HyEndFed 40-10m antenna. This tunes up happily with the internal tuner without any counterpoise and I've been getting very favourable reports from it. I even use it as my base antenna for 40m.

Unless you use a rig with internal batteries, the choice of power is between heavy but reliable sealed lead acid batteries (SLABs) and lighter but fussy and potentially volatile lithium-based alternatives. To date, I've used either a 3Ah or 5Ah SLAB on the hills and I keep them topped up between trips with an intelligent trickle charger. I've not yet managed to exhaust either battery on an expedition.



*Setup on Barrclashcane Summit*

My first SOTA foray was made during a family holiday in July of this year. For eight SOTA points, I activated Lackabane Mountain (602m, SOTA Ref EI/IS-043) near Lauragh, Co. Kerry. A stiff two-hour hike in warm sunshine highlighted my first mistake – not carrying enough water. Reaching the summit, which is marked by a small pile of stones, there was nobody about for miles, so I erected the antenna close to the top. Switching on the 703, the first thing I noticed was just how quiet the bands are once away from man-made noise. I had to check the antenna a couple of times to convince myself that all was well. Although I had posted an alert in advance so that chasers would aware of my planned activation, I didn't have a pile-up waiting for me – far from it. It took over an hour to make the required contacts, all 20m EU SSB contacts. I probably called CQ more in that hour than I had done in the previous year. Nevertheless, it was the most enjoyable radio session I had for a long time. On a beautiful sunny day, sitting on a mountain top, playing radio – what could be better?

At once, I was hooked. Closer to home, the Maamturks, the Twelve Bens, Nephin and Sheefry Mountains are all within easy access – SOTA heaven! I have now been on over a dozen expeditions, each time trying new ways to optimise my set up to maximise the time spent on air at the summit. My fitness has improved remarkably. Over time you get to QSO with quite a few ‘regular’ chasers. If you ask them nicely, they will spot you on the Sotawatch website and before long you are likely to have a pileup on your hands. The first time this happened was a major surprise to me – nice to be on the other end of the pileup for a change!. No doubt about it, if you time your activation well, you will be in demand!

Radio is only one aspect of the story. A reasonable level of basic fitness, proper clothing, footwear, map, compass and backpack are essential if you are drawn to the higher summits. Here you will find stiff physical challenges and the limits of your navigation skills and a commonsense respect for your own personal safety must be considered at all times. At certain times of the year you will be tormented by the dreaded midge and you constantly run the gauntlet of Ixodes Ricinus (sheep tick). Equally, there are numerous less-demanding summits, which are easily achievable on a family afternoon ramble. Proper planning is essential - once you have identified a potential target for activation, you will invariably find several recommended routes to the summit on walking websites like [mountainviews.ie](http://mountainviews.ie).

We are particularly lucky in Ireland to have such a fantastic array of SOTA designated summits within easy reach. In my

experience, hill-walking in Ireland is very much a minority interest compared to other countries in Europe. More often than not, you will have the summit to yourself. Occasionally you will meet other walkers, who may cast curious glances in your direction. On Djouce mountain, I was asked whether I was carrying out some sort of geological survey. On the summit of Corranabinnia in Mayo, I met a former EI2, whose licence had long since lapsed. We had a chat in the mist before we continued on our descents from the mountain in different directions.

I am constantly surprised why so few Irish hams take part in SOTA activities. Many of our designated summits have never been activated, while many others have been activated only by visiting hams from abroad. On the SOTA database, there are 20 EI's listed as having activated a summit. In England there are 682 registered activators, while in Germany there are 540. I recently had the pleasure to meet Portuguese SOTA activators Pedro Carvalho, CT1DBS and Joao Fragoso CT7ABE, while on holiday in Lisbon. As a memento of our meeting, they presented me with the Portuguese SOTA flag – in return I presented them with my pristine copy of the latest issue of Echo Ireland! Joao, who is an official with REP, the national radio association, told me that there are approximately five thousand licensees in Portugal, with thirty six registered SOTA activators. Pedro tells me that a Portuguese national SOTA activation day is planned for 2016, where activators will take to the hills and try to make as many summit-to-summit contacts as possible. It would be nice if sufficient interest existed to do something similar here.

Maybe as Solar Cycle 24 wanes (and the prospects for Cycle 25 aren't great!), we will look to alternative ways to maintain our interest and find new challenges. I can think of no better way to combine ham radio with a healthy outdoor lifestyle. I hope this article will encourage at least one or two licensees to dust off their portable gear and take to the hills. I hope to make a summit-to-summit QSO within Ireland someday soon!

73 John EI3KA

#### References

[www.sota.org.uk](http://www.sota.org.uk)

[www.hyendcompany.nl](http://www.hyendcompany.nl)

<http://mountainviews.ie>

[www.sota.org.uk/docs/SOTA%20-%20ARM%20Ireland.pdf](http://www.sota.org.uk/docs/SOTA%20-%20ARM%20Ireland.pdf)

[www.sotadata.org.uk](http://www.sotadata.org.uk)





## HF Happenings

### Anthony Murphy EI2KC

It's been a very interesting couple of months on the HF bands since I last wrote. Conditions have been up and down, with some awful propagation, particularly during the TX3X Chesterfield DXpedition, and some excellent conditions, particularly during the SSB leg of the CQWW contest.

Naturally as we emerged from summer towards winter, and the shorter days, many of you started to migrate back into the shack after pursuing summer activities, such as gardening, barbecues and sunbathing. OK, maybe not so much sunbathing – unless you were lucky enough to get away to EA, or CT, or maybe somewhere more exotic, like E2, or VK, or maybe even 8P?

One thing is quite certain – I'm sure none of you were in P5! And that brings up an interesting follow-on from the last article, where I mentioned Dom 3Z9DX's ambitious efforts to operate from North Korea early next year. I also mentioned that Paul N6PSE doesn't think Dom's activation will happen. We will see. In the meantime, another effort to activate P5 has been mentioned by dxcoffee.com. They report that Antonio EA5RM and Manuel EA7AJR have met with officials from the Democratic People's Republic of Korea's (DPRK) Telecom Ministry and that they are, and I quote, "very close to getting permission to realise the first legal ham radio operation from DPRK". This follows from previous meetings with DPRK government officials in 2013 and 2014. In April of this year, Antonio and Manuel presented details of a proposed ham radio project to these officials. "Just a few days after our project was received at the Ministry, the DPRK Government sent us an official invitation to visit the country looking to discuss our project details in person."

In August, they met the Telecom Ministry officials in DPRK, who they described as "very kind, receptive and cooperative. They knew everything about ham radio so it was really easy to talk to them about our ham radio operation project."

Let's hope that their efforts, and those of Dom 3Z9DX and others, are slowly breaking down any barriers and that in the months ahead we may hear P5 on the air. Certainly I hope there comes a time when P5 is not rare any more. There was a time when China was rare! However, we must strike a note of caution here, and that is, as N6PSE rightly points out, that previous attempts at diplomacy in an effort to operate from North Korea appeared to be going well but still failed.

#### Recent DX

Probably the most interesting, and perhaps one of the most talked-about, major events of the year was the TX3X Chesterfield Islands DXpedition. As I reported in the last issue, FK/C Chesterfield was the 22<sup>nd</sup> most-wanted DX entity on the Club Log list. An international team of twelve operators activated this entity in early October. Previous to the DXpedition, I looked at my amateur radio map of the world and, seeing that FK/C wasn't far away from FK New Caledonia, I thought to myself "that area of the world should be eminently workable".

Never in my ham radio life have I been so wrong! And over the ten days of the TX3X activation, I would eat those words time and time again.

A large slice of humble pie appeared on my shack desk by the time day ten came around. Was I going to have to miss an All -Time New One (ATNO)? Would I have to eat a slice of humble pie? I don't like humble pie. I prefer apple crumble. Two things became apparent as the days went by during the TX3X activity. The first was that propagation was not good. In fact, as the days rolled past, the solar flux index was falling, and by 9<sup>th</sup> October it was just 80. That's pretty horrendous. The second was that the TX3X operation seemed, for want of a better explanation, a bit strange. In the early days, when they were quite audible on 20 metres CW, they were working Japan and Europe, without taking advantage of the path to Europe, and therefore Japan made up 95% of the QSOs. And just when TX3X were strong, they would suddenly disappear. That became a trademark of the DXpedition. They would abruptly QRX, QSY or QRT without explanation.

There were other things going on too. They had problems with strong winds, which made it hard for them to hear properly. As always, it's never fair to criticise a DXpedition because these are people who have paid their hard-earned cash to go and activate hard-to-reach parts of the globe for the benefit of a sometimes ungrateful ham community.

However, as the days slipped by, I became more exasperated. They would be apparently exploiting the easy openings to JA and the USA, and all the while some parts of EU, most noticeably western Europe, were unable to get into the log. There was much grumbling on the DX clusters – presumably most expeditions to remote islands don't have good internet access and don't look at the cluster spots. This is probably a good thing! The EU stations were complaining (rightly, perhaps) that TX3X was persisting with SSB in favour of CW. But you can't please all of the people all of the time.



*Many HA/HG stations came on air for the Telecom World Conference. I decided to chase them, and eventually worked them all, including HA150ITU and HG150ITU - to qualify for the gold award.*

In the case of TX3X, a lot of people seemed displeased. By the time the tenth and last day of their activation rolled around, I was completely exasperated. I resigned myself to an awful prospect – I would not get a QSO with Chesterfield Islands, and for the first time since I've been chasing DX, I would miss an ATNO. That was a truly awful prospect, especially given that I had worked the likes of Kermadec Island with 100 watts and a vertical! I got up that Sunday morning with the following thought in my head – “They’re not even going to be on any band where they will be workable”.

However, everything changed on the last day. They were on 20m SSB and I could hear them! The pressure was enormous. The previous morning (Saturday) I had been confident of a QSO on 20 CW, but just as I was sure I'd get them, they had announced "QSY RTTY". *Nnnooooooooooooo!* The last day had arrived and they weren't even on 20 metres. But suddenly, up pops an update on Facebook from Gerry EI9JU saying they were on 14.185. Yes, I could hear them. But would I work them? I began to call. I heard "Echo India" but the rest of the call was obliterated by splatter from someone transmitting just 2 kHz away. *Nnnooooooooooooo!!*

A few minutes later I was calling again and this time I definitely heard my call sign, and something like "you're in the log already, but you're 5 and 9". Then Gerry EI9JU commented that he had heard me working them – twice! No QSO for nine long days and suddenly I had two on the same band and mode. A dupe – how embarrassing! Within a half an hour I also worked them on CW on the same band. Three QSOs in the space of half an hour – who would have thought it. *Yeeessssssss!!*

All the difficulties trying to work TX3X during their time on Chesterfield were compounded by the presence of DQRM on their TX QRG, by someone signing FBDA (not F6DA as was often reported on the clusters). I suspect this FBDA is the same person who caused havoc by QRMSing major DXpeditions over the past couple of years as EAHSYL (not EA5SYL). I can only assume that the location of EAHSYL had been triangulated, because he (or she, or “it”) stopped using that identifier, and changed. One noticeable pattern with FBDA is that he, she or it mostly confines their obnoxious behaviour to the low bands – 30m and below, obviously where few people have beams and it’s much harder to triangulate a position of the origin of the signal. I won’t devote much time to FBDA (an individual with a lot of personal and psychological issues, obviously) except to say I’ve noticed one other thing about them. They seem to get annoyed by people tuning and calling on the DX frequency, ironically. FBDA starts CQing immediately after someone tunes over the DX or someone calls them simplex when they are listening up. Has anyone else noticed this?

Another very annoying habit that is down to bad operating is when someone suddenly starts CQing on the DX frequency without first asking “QRL?” This is simply inexcusable. You must ALWAYS ask if the frequency is in use, even if you can’t hear anything. Once or twice I’ve heard a simple question mark – *dit dit dah dah dit dit* – followed by a long CQ. This is not good enough either. Sending a question mark on a frequency is about as useless a thing to do as having an ashtray on a motorbike.

Anyway, enough about QRM and FBDA, who should receive our sympathy as much as our anger. I did gain a little insight into the difficulties the TX3X team faced when I received an email from Steve, W1SRD, who contacted me having seen my YouTube video following my contact:

"Just listened to your YouTube posting. I was the op on the other end! Very gratifying to hear how happy you were to finally get us. It was really, really tough pulling the EU guys out as well. On our end it was basically a dull roar. Everyone calling was at the same level and I had to wait until someone popped a bit out of the noise to pick out a few letters or hopefully a full call. It's interesting to note propagation is not symmetrical. EU closed to us often before we closed to EU, hence people thinking we left too soon. Not so, we couldn't hear anyone. Glad to have been there. It was a great trip."

I'm interested in his suggestion that propagation was "not symmetrical" and that EU closed to them before they closed on the EU side. That's not something I've encountered before.

After the exasperation of Chesterfield, there followed two excellent DXpeditions – V73D Marshall Islands and 3W3MD. These activations were helped enormously by an improvement in conditions.

V73D

The V73D team operating from Marshall during October was made entirely of German operators. Now I don't want to sound discriminatory, but I like DXpeditions that have a lot of German ops. It's not that I don't like ops from other countries, it's just that the German ops seem to have the very best skills and operating practices. And they have brilliant ears. I managed to work them on CW on 17, 20 and 30m, which was a new band for me. But I also got them on 20 SSB, which was a new mode, and 20 RTTY – giving me a new country on digital modes.

3W3MD

Another great DXpedition which overlapped October and November was the 3W3MD trip to Vietnam. The team for this one included our very own Jeremy Sheehan, EI5GM. It was refreshing to see Jeremy's updates on Facebook about the trip, while he was there. I found this to be a very professional activation, and also found the 3W3MD team to be eminently workable, except on 40m and 80m, but that's only because of my own deficient antenna system for the low bands. After just a day or two of trying, I had them worked on six slots, and by the time it finished that had crept up to nine, including a RTTY slot and a 10m slot (CW).

3B7FA

Patrice (Pat) 3B8FA went to St. Brandon Island in late October for a week operating holiday-style mainly on PSK and SSTV, operating as 3B7FA. I had never worked this DX entity, and I knew it was going to be tough getting him into the log. My odds were not great. I saw his print on 15 metres PSK63 one day but because he was operating simplex it turned into an unruly mess. European stations kept calling and calling and calling and there were absolutely no gaps for listening. It was an idiot-fest to say the least. Then Pat QSY'd to 20m SSTV. This drew all sorts of horrible and demeaning posts from the usual moaners on the cluster.

Yes, I was frustrated because I needed 3B7 – but I did not take my frustration out on the cluster. Instead, I tried to watch for him on SSTV, and did in fact partly decode him a couple of times, sending a picture to a station he was working. But the QRM took over again and pretty soon it was just one European after another, calling, calling, calling, with no listening/watching whatsoever. Eventually I gave up.

The next day, Pat was back on 15m PSK63, and the usual simplex mess began. After a while, though, he started calling “UP”. I tried up but couldn’t get a QSO, until I figured out what he was really doing. He was moving up and down the waterfall, trying to find a clear spot, and would work someone simplex on that spot. I tried to watch for him. It was an interesting game of cat and mouse. Suddenly I could see him working Erik EI4KF. This is what I decoded:

EI4KF TU 599tg99 EI4KF pse c rt—

So as soon as that QSO was finished I called in exactly the same place. Here’s my somewhat garbled decode of what followed:

3B7FA de EI2KC EI2KC k

“wci l

EI2NU 5599 EI2KCapse K

3B7FA de EI2KC 599 599 EI2KC TNX K

QSL TU 73!!

Wow! I worked him! A brand new DXCC, country number 315 for me. I was delighted. I was fortunate to have been on a week’s holiday from work that week – otherwise I would never have worked him because he was only active during the day. I later received an email reply from Pat, confirming that my call sign was indeed in his log. Delighted.

### Meeting DJ4EL

Markus DJ4EL got in touch with me in early October to say he was visiting Ireland, and specifically Newgrange, which many of you know is not only close to where I live, but is also close to my heart. He asked if we could meet up so he could give me QSL cards for contacts we had when he was on VP9 Bermuda and 5Z4. I said I’d be delighted. I met Markus and his wife and father-in-law in the Boyne Valley and we had a long chat over some food at Daly’s Inn in Donore village. He had some interesting stories to tell, as you can imagine. We exchanged QSL cards and posed for a photo before parting company.



Anthony EI2KC and Markus DJ4EL exchange QSL cards for contacts made when Markus activated Bermuda VP9 and Kenya 5Z4



*In September I started enjoying some portable activity using my IC706MkII running 5 watts into a Watson Multiranger whip on the roof of the car. I enjoyed several QSOs into Europe and Russia. Power was supplied by a 7-amp gel battery.*

### VK9WA Willis

As I write, the VK9WA Willis Island DXpedition has begun. I am hunting it as an ATNO. I will update you in the next issue.

## Forthcoming DX

### FT4XU Kerguelen

Nicolas F4EGX will be active from Kerguelen for a period from roughly late November until mid-January 2016, but his operation will be only spare time holiday-style activity. He is not in a position to devote much time to radio. He will be based on Kerguelen primarily for science work. He will be using a battery-powered FT857, a dipole, and a maximum of 50 watts. Kerguelen is the 17<sup>th</sup> most wanted DXCC. If he can be heard, Nicolas can expect some serious pile-ups and QRM. I need Kerguelen as an all-time new one, but I have my doubts about getting a QSO under the circumstances.

Gildas, TU5KG, informed DX-World.com that for a period of time in early 2016 he will be on Kerguelen Island. When active from there he will sign as FT5XT. Gildas is captain of a fishing vessel which will be sailing in the FT5 area for up to three months so activity will be sporadic. When not on Kerguelen he will sign FT5XT/MM. QSL via F4DXW.

### YJ Vanuatu

Robert, DL7VOA will be active holiday-style from the Eratap Beach Resort, Port Vila, Vanuatu as YJ4AO between December 27, 2015 to January 13, 2016. More information on his QRZ.com page at [qrz.com/db/yj4ao](http://qrz.com/db/yj4ao)

### South Sandwich and South Georgia VP8/S and VP8/G

As mentioned previously, in January 2016, a team of fourteen will depart Stanley, the Falkland Islands, on the RV Braveheart and embark on a 37-day voyage encompassing South Sandwich and South Georgia Islands. They plan to activate South Sandwich island first as it is the third most-wanted DXCC in Clublog. They will be active on South Sandwich for eight full days, weather and sea conditions permitting. They will then re-board the RV Braveheart and make a voyage to South Georgia Island, the eighth most-wanted entity. They will activate South Georgia Island for eight full days before starting our return voyage to the Falkland Islands. Including set-up and tear-down time, they

plan to be on each island for 10 days. While they intend to activate these two rare entities during this voyage, their primary activity and focus is completing eight days of activation at South Sandwich Island as it is most needed by the global DX community. Their primary goal is to do a good job from South Sandwich before moving to South Georgia Island. [intrepid-dx.com/vp8](http://intrepid-dx.com/vp8)

### VK0EK Heard Island

An international team of operators will activate the remote Heard Island in the deep southern Indian Ocean near Antarctica in March 2016. Heard Island is currently the fifth most wanted DX entity on the Clublog list. The scale of operation is impressive. They hope to be on air from March 18<sup>th</sup> to April 10<sup>th</sup>, with two stations on either end of the island, to ensure maximum coverage of the globe. Their target is to make 150,000 QSOs. [vk0ek.org](http://vk0ek.org)

### A35T Tonga

A team consisting W5MJ, K5NA, K5DU, ZS6RJ, VA7DX, VE7KW, W5PF and W5RF will be active from Tonga

## EI1Y - CQWW CW Contest 2015

The Echo Ireland cover picture shows the EI1Y team. Back row K1CC, EI2JD, EI3KG, EI6DX, EI9KC - front row SQ9UM, SQ6MS, SP4Z, SQ9C. Not shown is Adam EI5JQ who took the photo. They had 6155 QSOs in the M/S HP section for a claimed score of 10,792,751

The following is a report on the operation by Rich K1CC, as posted to the 3880 Scores mailing list..

### [3830scores.com/showrumor.php?arg=EwarzLfymfcf9](http://3830scores.com/showrumor.php?arg=EwarzLfymfcf9)

This was a multinational effort from the EI1Y station in Naas. We gathered a group of ops to defend the EI1Y Ireland record in CQWW CW from 2014. Unfortunately conditions were nowhere near as good this year. Congratulations to our EI7M friends who captured the title or at least came very close to it.

The station is a rather modest one at the QTH of EI3KG and EI5JQ. There are two 60 ft (20m) towers with a GB312 tribander on each, a single Moxon 2el 40, ¼-wave vertical on 80 and Inv-L on 160. There's a vertical at the edge of the property for the in-band run station. The location is on the side of a hill with a slope to the west (good for the US!) but not so good in other directions. This was reflected in our multiplier totals. Working Asia and Pacific from EI is not as easy as from Eastern Europe or the US and requires additional antenna height and gain which was lacking. It was always a struggle. On the other hand, working the US is just great, not unlike being in New England toward Europe.

We were neck-in-neck with EI7M after the first night on the low bands. We were counting on 10m to the US to carry us through but 10m let us down. On top of the poor conditions, our tribander had a high SWR on 10m and we were forced to use a WRTC-style small tribander on a temporary ladder to use on 10m – not good! We put that up on Thursday before the big winds as a second antenna pointed to Europe and it turned out to be a good move.

between February 18 and 24, 2016 [tonga2016.com](http://tonga2016.com)

### FT4JA Juan de Nova

Juan de Nova FT/J will be activated next year from March 31<sup>st</sup> to April 14<sup>th</sup> with the call sign FT4JA. The team will consist of ten French radio amateurs - [juandenovadx.com/en](http://juandenovadx.com/en)

For information on upcoming DX activations, see:

dx-world.net      dxcoffee.com/eng  
marioi2mfp.it      dailydx.com/calendar.html

That's it for now. I hope you all enjoy chasing DX, or operating casually on HF if that's your preference. I know it's probably a bit early, but as HF Happenings won't appear again until 2016, can I take this opportunity to wish you all a very Merry Christmas and a Happy New Year.

Until next time – catch you in the pile-ups.

Slán go fóil,  
Anthony EI2KC



*Top of photo shows Thos EI2JD and behind him Ark EI9KC - operating the two multiplier stations. Below Thos is Michal EI3KG on the RUN station and right is Maciek SQ6MS operating the "In Band" station.*

Ireland in November is constant wind and rain. On Sunday we pointed the antennas into the wind as a new front came through, waiting for something to break or fall – it didn't.

On the positive side, we set up four stations and really worked our second radios very hard, a great experience for everyone. We had two teams of four ops each doing 8-hour shifts and rotated through the four operating positions during each shift. This gave everyone equal time in each seat and gave everyone a taste of propagation at all times of the day. So in effect it was 24 hours of operating and time to rest and socialize.

A good time was had by all. Everyone learned something new, we made new friends and the camaraderie was second to none – isn't that what ham radio contesting is all about? A big thank you to our hosts and a special thanks to Adam EI5JQ who provided non-stop technical support and was always there to fix problems as they arose. We managed to keep him busy all weekend. My personal thanks to EI3KG and EI5JQ for the invitation and the hospitality.



## Foxes fly while Lilac blooms

### John Breen EI7BV

Amateurs may wonder what flying foxes and blooming lilac have to do with Amateur Radio. You may be surprised that they have quiet a lot!! If one points an antenna skywards you may hear them as they are both names of new amateur satellites.

#### The Flying Fox

The latest Amateur Satellite Fox-1A build by AMSAT-North America was launch on the 8th October 2015. Fox-1A is the first of a series of CubeSat's being built by AMSAT-NA. Fox-1A is an FM satellite and is configured in the U/V mode (i.e. 70cm uplink, downlink 2 Metres). With it's slightly higher power level – up to 400mW – and the downlink being in the 2 metre band it is said that there is close on 6dB gain in the downlink signal compared to that from SO-50. On a high elevation pass I have easily received it on a handheld with a whip antenna (not a rubber duck). Shortly after launch and following it being heard it was given the Oscar number AO-85.

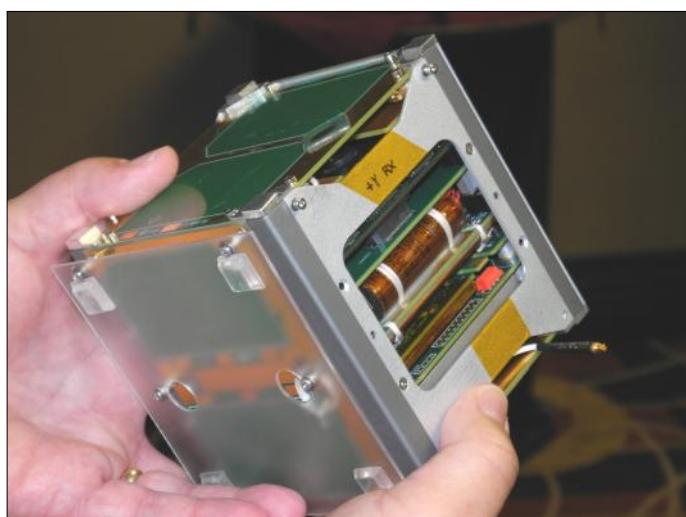
More Foxes are due to fly in 2016. Fox-1B will be similar to Fox-1A but will be in a sun-synchronous orbit. It is due to be launched towards the end of 2016. Fox-1C and Fox-1D will also be FM satellites. They will have the standard U/V configuration but will also include an L/S configuration option. For those of you with a redundant satellite L-band up-converter left over from the days of AO-40 and AO-51 now is the time to dust it down and check it out again. Finally Fox-1E is being considered. It will differ from the others in that it will be a linear transponder (30 kHz wide) and will be in a V/U configuration.

While for a few years there had been a dirt of FM "Easi-sats" when all the above satellites are up we will have a plentiful supply to operate through.

#### Blooming Lilac

In late September the Chinese launched LILACSAT-2. This is an FM satellite and is configured in the V/U mode (i.e. 2 Metres uplink, 70cm downlink). Along with Lilacsat-2 they also launched 6 linear satellites (SSB/CW & digital Telemetry) which are all configured in the U/V mode. The satellites are XW-2A to XW-2F.

Amateurs should note that while the uplinks for XW-2A to XW-2F are within the ITU designated 70 cms sub-band for satellite operation (435.0 - 438.0 MHz), only three of the downlink (XW-2D, XW-2E & XW-2F) are within the 2 metre IARU sub-band for satellite operation (145.8 - 146.0 MHz). The other three fall within FM/Repeater portion of the 2 metre Band. In the case of LILACSAT-2 the FM uplink is in the SSB portion of the 2 metre band.



*Fox-1A Engineering model*

## Radio News Bulletins and Readers

### Sunday

Dublin	1100	7.123	SSB	Sean EI7CD, Ger EI4GXB, Paul EI2CA
Wicklow	1130	3.680	SSB	(as Gaeilge) Paddy EI7GK, Danny EI6GS
Dublin	1145	145.525	FM	Tony EI5EM, John EI7JG, Frank EI6EF, Liam EI3HK
Clare	1200	3.650	SSB	Ger EI4GXB, Sean EI7CD
Mayo	2000		FM	145.600, 433.450, 70.375, 50.450 - Padraig EI9JA, John EI7FAB, Mike EI2EO, John EI3JM, Dominic EI9JS
Tipperary	2030	145.450	FM	Tommy EI2IT, Eddie EI3FFB

### Monday

Cork	2000	145.750	FM	Vincent EI7HN
Limerick	2000	145.725	FM	Brian EI9AL, Simon EI7ALB, Ger EI4GXB, Liam EI7DSB, Tony EI2AW
Louth	2000	145.675		Thos EI2JD, Anthony EI2KC, Jim EI2HJB

### Tuesday

Waterford	2130	145.650	FM	David EI6GV
North Cork	2030	430.925	FM	Lisa EI9GSB, Robbie EI3GGB



# I know a Ham that is a bit annoyed...

## Brian Whelan EI8EJB

I know a Ham that is a bit annoyed.

Let's explain with a little story...

Long, long ago, over 35 years ago, in fact, a wide-eyed young enthusiastic budding radio amateur was chomping at the bit to sit the R.A.E. multiple choice exam having attended theory classes at his local Amateur Radio Club (of which he was a founding member at the tender age of 14) and, once passed (seriously confident), would be able to apply for his Experimenters licence and finally get on the air and chat. Unfortunately, the boring old school State exams and 3<sup>rd</sup> level education got in the way, so sitting the RAE or the Department's Experimenters exam was put on the back burner, but he was careful to throw a shovel of coal on that back burner now and again to keep the fire lit.

Eventually, about 15 years later, this now-not-so young man sat the non-multiple choice Experimenters Licence exam in 1994 and became the licensee for his newly-received callsign.

So far, so good.

He got on the air, albeit just on VHF and UHF, as the letter 'B' that was appended to the callsign suffix meant that this new callsign was classed as a B licence. No instant HF access for the poor B licensees in those days! In order to operate on HF back then, you either had to pass a 12 wpm Morse test, thus becoming an A licensee, or else you operated on HF using a radio club callsign or even using an A licensee's callsign under their supervision.

Still so far, so good.

Our friendly Ham enjoyed operating on the 144MHz and higher bands. Remember, authorisation to operate on 50MHz and 70MHz was not a given; you had to apply for each of those bands separately with absolutely no guarantee of being successful with your application, especially if you lived in an area likely to have the low Band I VHF TV bands affected by your 6m operation. The present day licensees don't know how lucky they are with the introduction of the most recent 2009 Regulations that were passed into law in Ireland. Gone were the Experimenters as a licence type and in were ushered the new Amateur Radio licences. The fact that the term "Experimenter" meant something totally different under ITU Radio Regulations may well have had something to do with this seismic change for the hobby In Ireland...

In the mid 90's, fancy new operating modes rose in popularity to add a bit of spice to VHF operation, such as satellite operation and Packet radio, as PCs were slowly becoming available to the home owner.

The years passed by and eventually B licensees (or CEPT 2 licences) were given full access to the same HF bands that the A licensees had always access to and if so desired, to obtain a "full" A licence or CEPT 1 licence, all you had to do was pass a much less taxing 5 wpm Morse test.

Our CEPT 2 licensee remembered facetiously thinking at that time that if one waited for another few years, that one may be able to get a CEPT 1 licence by simply applying with just a

stamped addressed envelope and four coupons from cereal boxes!

Time marched on.

In the early 21st century, our buddy ended up doing very little operating on any band, certainly none on HF, because HF held little interest for him as he hadn't been originally allowed to operate there in the first place. He operated very little on his old favourites of VHF and UHF for two reasons; firstly, the profession that he was in most definitely put his transmitting days on hold (but trust me, he was still listening continuously to many, many bands and not just amateur radio ones either) and secondly, there were fewer and fewer people operating on air on the VHF and higher bands.

Perhaps the rollout of broadband internet access to the public, in particular the young, had killed off the fascination for two-way radio to a certain extent as a means of global communication, which may be one reason for the lack of new blood coming into the hobby to replace or to add to the ageing amateur radio population. The shine and enthusiasm for amateur radio waned for our disillusioned CEPT 2 (Class B) licensee as it did for many, but he was still annoyed.

After all these years of going to the hassle of getting licensed, of getting various bits of antennas and radio equipment, going to the trouble of continuously learning new things about amateur radio almost daily, he felt a bit peeved because he now found that he had almost no one to speak with on air, especially on his various trips around the Emerald Isle.

Then something amazing happened.

Our disillusioned and still slightly peeved ham got smitten by HF. Yip. He was well and truly smitten.

It all started when a very kind and generous gentleman offered to loan a beautiful, expensive HF transceiver to this almost anti-HF operator. It was a Garden of Eden moment where the temptation grew too strong to resist. A hastily erected 17m dipole was the equivalent to biting that forbidden apple. That was mid-October 2014, over twenty years after getting his callsign.

For the next nine months, running about 80 Watts from the rig into a home-made fan dipole antenna mounted at about 6 metres above ground level, our newly fired up and re-enthused ham got into HF DXing. Present count is over 160 DXCC entities worked and climbing slowly. The past three quarters of a year has been busy for him. He has kept his newly found enthusiasm for amateur radio alive by; constructing antennas for HF; gaining experience in HF operating techniques, such as working out how to be cunning and sneaky in working rare DX with his puny 80 watts in *BIG* high powered pile ups; becoming more involved in his local radio club; creating a huge formula-crazed custom-made Excel logging workbook that automates all that he personally requires in logging; studying radio propagation and solar weather; studying the amateur radio regulations in Ireland and suggesting areas that could be improved in the Guidelines; building a 6m transverter from component level

(his ageing eyesight now definitely deteriorating!); meeting up, by chance, with old friends from thirty years ago on 40m, who coincidentally also became licensed amateurs; listening, listening and more listening; the list goes on.

But having said all that, he's still gets sporadically annoyed, like the E layer.

It annoys him to hear the increasingly bad operating on HF. Although he had only been actively transmitting on HF for the past six months or so, that didn't mean that he hadn't been monitoring HF for the past nearly forty (gulp!) years. He had noticed a rather unhealthy decline in basic good manners of general operating. It wasn't just the stereotypical Continental European operators (who have always had their share of the bad press, unjustly in many instances) who were the cause; no; its operators from other countries (that should know better) that seem to have slipped down the ranks of good operators. Not just in pile-ups either.

Maybe it is something to do with the fact that, and this is going to be controversial, its too bloody easy to get a licence these days to operate on HF where bad behaviour is received by a global audience, rather than that bad behaviour only being heard locally if operating on VHF.

A person who knows absolutely nothing about radio or electronics could, in theory, walk in off the street and sit the multiple choice exam and successfully pass which does not demonstrate any knowledge of amateur radio. I know that this is highly unlikely, but there are plenty of borderline cases who have passed through pure good luck.

Some of the newer licensees who have passed their exam and who jump straight onto the HF bands should probably become better acquainted with good operating techniques. It's not just themselves they represent on air, but rather the country prefix of their callsign. This doesn't just apply to Ireland; it is meant to be considered internationally.

Unfortunately, it is all too easy for anyone, including the unlicensed folk (yes, it is still illegal to be in *possession* of, regardless of whether its used or not, a piece of wireless apparatus without a valid licence), to buy a HF rig with no questions asked or licence documents produced, plug in an antenna and operate straight away without the testing of proper antennas and their feed systems or performing the 'plate and load' rituals and formality that older rigs demanded, things that, if improperly used, can cause interference to other radio spectrum users.

In the '*old days*' when you became an Experimenter licensee, there was a sort of cooling-off period from the time of getting your A licence whereby you could only operate on CW for the first twelve months or else you had to obtain a lorry-load of QSL cards which allowed you to have full access to all the HF bands within that time.

It was normal to hear these pending A licensees using 2m and 70cms while those twelve months ticked by. This was a novel novice-type approach. It now seems to our ham, in hindsight, that this rule was a pretty good idea; an analogy would be having to display an N plate on your car after passing your driving test.

It is now all too common to hear radio amateurs on the bands who seem to only be concerned about trying to add *quantity* to their station setups, rather than *quality*, to boost their superiority complex on air with the addition of things like super-duper audio processing that quite often sounds terrible with overdriven audio harmonics using too much bandwidth. Or maybe they like running maximum power (plus a little bit more?) the whole time, causing adjacent channel splatter or worse!

And the QSO that really annoys; you've all heard them; the QSO where one station is obviously having great difficulty hearing, thus understanding, the other station and vice versa and when eventually, after much double phonetic spelling of callsigns, both stations have the audacity to give one another "5 9" reports. What is that all about? One doesn't know... Sometimes the power switch is reached for and is flicked to the OFF position in annoyance.

Sitting back and thinking, our now calmer ham would just sigh and then smile to himself remembering that, despite everything, despite the frustratingly tempting advertisements in magazines for amateur radio equipment that can cost thousands of dollars, pounds, yen, Green Shield stamps, despite the endless hours spent chasing that one rare DX station while pulling out one's hair and drinking buckets of black coffee to stay awake, despite the ridiculous verbal abuse that total strangers sometimes lavish upon one another on air because things are taken so, so serious, despite the fact that most QSO's made on HF in particular are just "*wham-bam-thank-you-maam-5-9-good-dx*" efforts which, in actual fact, means very little, despite the fact that too many people who are still current licensees, still with equipment, only listen and never get involved, who could otherwise enhance the bands by just banging away on a paddle or just lifting a mic to say "Hello" to the world, that despite all these things and so much more, the fun can *still* be found on air, after all ... Amateur radio is still just a hobby.

*"If Carlsberg did hobbies, then..."*

## Radio Officers' Association New Publication

The Radio Officers' Association has now published "The Long Silence Falls" Volume II, a book of stories of the life and times of the merchant navy Radio Officer.

The book is full of stories from ex Radio Officers covering topics such as, War Stories; First Trips, Last Trips and Voyages in between; Life on the Ocean Wave; Life Ashore; stories of Irish Radio Officers; plus much more, including many photos of onboard Radio equipment.

The Association would also be glad to hear from any 'Radio Officers' who would like to become a member or would like to contribute a story to its quarterly Journal 'QSO' For more information about the "The Long Silence Falls" or the Radio Officers Association - [radioofficers.com](http://radioofficers.com)



# Fan Dipole Recipe-EI8EJB Hexpole

## Brian Whelan EI8EJB

**Fan Dipole Recipe** (*now renamed the EI-8-EJB Hexpole*)

The Recycled Version

(*I.M.V. means 'In My Version'!*)

### Ingredients:

45m(ish) length of insulated wire (*I.M.V. recycled from the flex of a broken electric strimmer*)  
One plastic weather proof box (*I.M.V. a child's small leak-proof lunch container*)  
Four long plastic spreaders (*I.M.V. fashioned from the frame of an ancient Wendy house; I kid you not...*)  
Six dipole end insulators (*I.M.V. fashioned from broken plastic school rulers*)  
10m plus of good quality 50ohm coaxial cable (*I.M.V. a never-before-used length of RG 213 from a never-before-used discone*)  
40A choc block electrical connectors  
Rope (*for supporting the completed antenna from a handy tree/house/round tower*)  
One ball of PVC string  
Three lengths of swagged 25mm steel tubing as a support mast (*I.M.V. acquired from trampoline protective netting*)  
One 3m length of 25mm plastic conduit.  
1 roll of self-amalgamating tape  
1 roll of duct tape  
1 measuring tape  
1 soldering iron and solder  
2 supports (*tree/house/round tower*)  
1 ladder  
1 bucket of ingenuity & a sprinkle of fairy dust...

### Method

**1.** Measure out a half wave length of wire using the formula  $150/\text{Frequency in MHz}$  (*and a bit extra for tuning or trimming*) for each of the three required bands, in this instance, the 40m, 20m and 10m bands. Stay away from designing the antenna to resonate on bands that are harmonically related such as 40m and 15m or 30m and 12m. If you try to load the antenna with RF on 40m, the 15m elements will affect the overall impedance and mess up all your good intentions.

**2.** Cut each half wave exactly in half (*for the mathematically challenged, you will now have six wires; that is two quarter wave length wires for each of the three bands, hence 'Hexpole'...*)

**3.** Bare a couple of centimetres off one end of each of the six freshly cut wires.

**4.** Tin the freshly exposed wires.

**5.** Solder a 40m, a 20m and a 10m quarter wave wire together which will provide one half of the fan dipole (*Hexpole!*). Solder the other 40m, 20m and 10m quarter wave wires together to provide the other half of the fan dipole (*again, Hexpole!*).

**6.** Tie a large knot on each of the six wires just after the soldered end. This will provide an anchor point later.



Calm Before the Storm

**7.** You should now have the basic layout of the full three band resonate di-, I mean, Hexpole.

**8.** Using the plastic container, punch six holes, three holes either side in a row opposite one another, the holes being roughly the diameter of the insulated wires and the holes spaced about two cms apart.

**9.** Working from the inside of the container, thread the free ends of the six quarter wave elements with the 40m wires



During the Storm

through the top opposite holes, the 20m wires through the opposite middle holes and the 10m wires through the opposite bottom holes and pull through completely until tie knots stop any further progression.

**10.** Have a quick tea break...

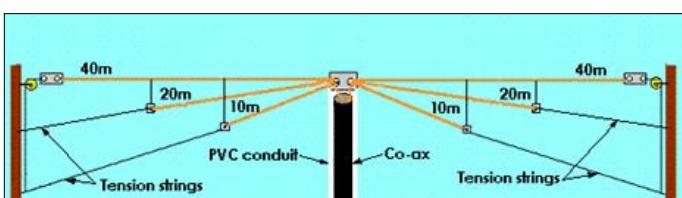
**11.** Insert the soldered ends of each dipole side into one half of the choc block and screw down tightly.

**12.** Bare and separate the inner and the screen conductors from one end of the coax to form 'pigtails'.

**13.** Attach the centre conductor to one half of the choc block and the screen conductor to the other half of the choc block.

**14.** Do a quick continuity test to ensure all the free ends of the wires on one side of the tube are connected to either the inner or the outer conductor of the coax.

**15.** Once the electrical connections are confirmed, push the entire choc block assembly right into the "secure weather-impervious multi-terminal radiator to feeder interface hub device" or kiddies miniature lunch box, but please ensure that wires don't crossover or get tangled up inside the S.W.I.M.T.R.T.F.I.H.D.



*Hexpole Schematic*

**16.** Using copious amounts of both duct tape (*for strength*) and self-amalgamating tape (*for waterproofing*), with a sprinkle of fairy dust (*for luck*), completely seal the hub assembly, especially around the holes where the wires poke through.

**17.** Spread the wires out on the ground in a fan arrangement and attach the end insulators to the six free end elements then attach long lengths of string to the free ends of the six insulators.

**18.** Affix (*yes, AFFIX!...*) a 60cm insulated spreader between the end of the 10m element and the other two elements so that the three elements are in the same plane, but separated at a slight angle, so to speak.

**19.** Affix a 30cm spreader from the end of the 20m element to the 40m element.

**20.** Repeat the last few steps to the other side of the Hexpole.

**21.** You can attempt to tune the elements with an antenna analyser by raising the antenna a little bit off the ground. Tune the 40m elements first as the lengths trimmed are more forgiving. Do not try to achieve a 1:1 match on all three bands. It won't happen. Of course there will be a few impedance bumps due to element interaction. Anywhere from 2:1 SWR down on each band is fine. I won't bore you with the petty loss figures trying to achieve SWR Nirvana. Leave well enough alone!

**22.** Attach the centre hub assembly to the plastic conduit with yet more duct tape, then attach the free end of the conduit to the length of steel tubing which forms a support mast and use this to raise the centre section up. The plastic conduit has a triple purpose; it provides the high current carrying sections of the Hexpole (*the antenna isn't really a 'Di'pole...'.*) with sufficient isolation/insulation from the support mast that could affect the radiation pattern to make it worse that it might be already, secondly, although the PVC is quite stiff, during high wind conditions (*the weather, not the operator...*) there is quite sufficient flexibility to allow the antenna to move with the wind causing less stress on the supports and thirdly supporting the antenna in the middle does take away quite a bit of strain on the centre assembly and off the antenna wires that are carrying all the weight of the whole assembly, in this case, the 40m elements. As with any self supporting wire antenna, especially ones designed for the longer wavelength bands, the wires under tension WILL stretch over time causing the resonance to change.

**23.** Climb the ladder (*you did check your health insurance payments were up to date?*) to tie off one end of the 40m dipole to the first support structure (*tree/house/round tower*), now repeat the daredevil ladder-climbing antics up the second support to attach the other end of the 40m dipole. The mounting height is important. In theory, the antenna should be mounted at least one half wavelength of the lowest frequency used above ground level to provide sufficient low angle radiation for DX purposes. This means mounting the antenna at about 20m above ground. In many cases this is pretty unachievable in practice. The eaves height of an average two storey house is about 5m, unless, of course, your house is called South Fork or Leinster House. My antenna is mounted at about 7m at my house end and eventually, due to a sloping garden, becomes about 10m at the tree support end. Because of the low mounting height, in relation to 40m operation, my antenna is more akin to a NVIS antenna which is grand, although having worked DX to the Americas and VK/ZL on 40m at 80w says otherwise. I have tried modelling the full antenna using ENZEC, but apparently this is one style of antenna that ENZEC cannot model properly without doing a little trickery and gentle manipulation of feed points, etc.

**24.** Raise the full dipole assembly using the 40m dipole as the main flat top allowing the other elements to be suspended from the 40m dipole.

**25.** Tie down the free ends of the 20m and 10m dipoles so that they form the basic fan shape.

**26.** Route the coax from the dipole back to the shack. It may be prudent if you have a sufficient length of coax cable to make a common mode 'dirty balun' consisting of coiling about six turns of coax into loop of a diameter of approx. 30cms just below the feed point of the antenna. This can be affixed (*yes!?*) to the plastic conduit to support the weight. Stick the other end of the coax into the back of your fancy Yaewoodcomtec HF radio (*having first attached a suitable coax connector*) and see how well the new multiband dipole (*HEXPOLE!*) behaves across the designed three bands regarding the SWR WITHOUT a tuner.

**27.** I was more than lucky (*possibly due to an overdose of fairy dust...?*), because I didn't find the SWR to be any higher

than 1.6:1 across the full 40m band. 20m was a flat 1.1:1 and 10m was no higher than 1.2:1.

**28.** Any little excesses of high SWR can be removed with a tuner, which of course doesn't 'tune' the antenna at all, but does allow the 50 ohm matching output stages of your transceiver to see a lovely 50 ohm load. How much RF is actually radiated by the actual antenna depends on how resonant it is in relation to a half wave. Additionally, because the 15m band is a third harmonic of the 40m band, you should find that the 40m section will tune up quite nicely on 15m, and with a serendipitous bit of pointy-lobed patterned gain, thank you very much!

**29.** 30m, 17m & 12m tune up nicely on the version that I constructed which gives me 40m, 30m, 20m, 17m, 15m, 12m and 10m all from a simple three-band fan dipole. Granted the radiation pattern for the WARC bands may contain more crazy lobes than ear piercing convention, but it's all a compromise!

In summary, my fan dipole/Hexpole is a budget antenna, both financially and from the RF point of view, but it works. I've worked DX, and out of curiosity I plotted the DX locations on a world map per band to see if there was any correlation between the theoretical and the actual radiation patterns of the antenna. Amazingly on all bands, apart from 15m, the theory patterns matched the actual patterns pretty much spot on. The 15m operation, of course, has higher gain offset lobes which do not follow the same patterns as those of simple half wave patterns. God only knows what the actual radiation patterns are really like for the WARC bands. Wire antennas allow for experimentation on a grand scale from HF up to UHF and beyond!

Total cost of buying parts for the complete antenna for me was €0.00, so all round good value for money.

See you (*or even hear you*) on the bands!

## The 5MHz Newsletter

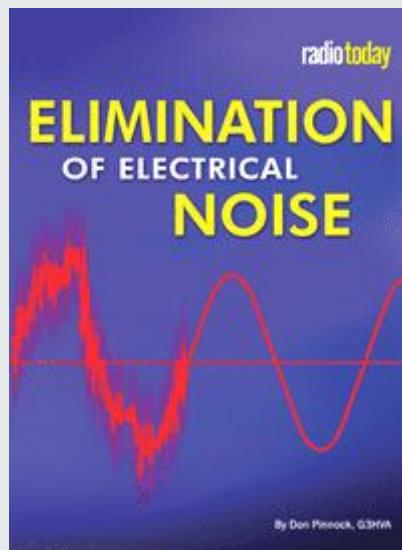
The Summer 2015 (No.14) is now available for free download in pdf format from <http://tinyurl.com/ockn2ea>

It can also be found in the 'external links' section of the Wiki 60 Meter Band page and on the RSGB 5 MHz page.

Our 5th Birthday edition includes

- News on the CEPT European Common Proposal for an amateur 5 MHz secondary allocation for WRC15
- 5 MHz allocations in Hungary, Oman, The Netherlands and Honduras
- Updated listing of WebSDRs covering 5 MHz
- A Pyramid Antenna for 5 MHz
- The new FSQ datamode, optimised for NVIS.

## NEW from RSGB Publications



### Elimination of Electrical Noise from 30kHz to 30MHz

By Don Pinnock G3HVA

Many radio amateurs experience electrical noise problems and feel forced off the amateur radio bands. Don Pinnock G3HVA is a firm believer that radio amateurs should deal with the problems rather than not be forced off the air. Elimination of Electrical Noise therefore tells of Don's personal experiences and provides solutions to noise problems that will help many.

In Elimination of Electrical Noise, Don details the various types of noise, how it is generated and how best to deal with it. Faulty or maladjusted machinery or electronic devices can produce so much interference that normal reception is considerably affected. Even equipment operating below or close to International Standards can generate enough electrical noise to severely reduce the chances of a nearby amateur being able to enjoy his chosen hobby. Don describes how to track down a noise source, how to deal with it at its source, and how to put up defences in your own station to reduce noise entering via the mains wiring. He reports on his own experiments with selecting wire antennas that have increased immunity to external noise. And for those looking for a new house, there's advice on how to choose it from the point of view of noise.

If you suffer from electrical noise problems, Don's experiences and advice may well provide the solution you are looking for. Elimination of Electrical Noise provides the help you may need to take charge, tackle that noise problem and get the most from your hobby.

The book sells for £6.99 but **IRTS members** can get a **10% discount** on this and other excellent books from the RSGB Shop by using the Discount Code on the back page of Echo Ireland.



# A Brief History of 4metre Band

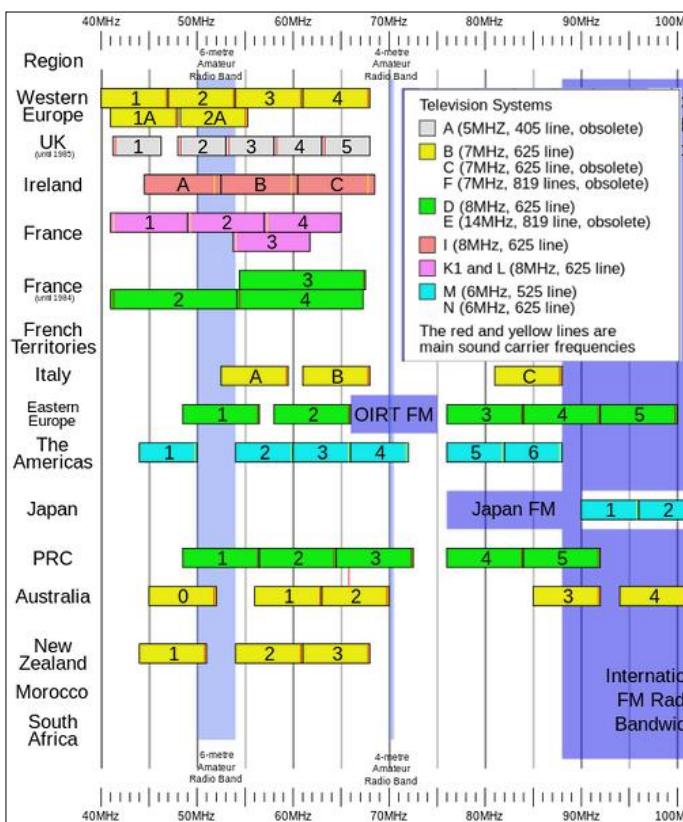
## Tony Allen EI4DIB

Before World War II, British radio amateurs had been allocated a band at 56 MHz. After the war ended, they were allocated the 5-metre band (58.5 MHz to 60 MHz) instead. This only lasted until 1949, as by then the 5m band had been earmarked for BBC Television broadcasts.

In 1956, after several years of intense lobbying by the Radio Society of Great Britain (RSGB), the 4m band was allocated to British radio amateurs as a replacement for the old 5m band allocation. For several years the 4m band allocation was only 200 kHz wide - from 70.2 to 70.4 MHz. It was later extended to today's allocation of 70.0 to 70.5 MHz.

### Allocations

A chart showing how Television channel frequencies in various countries relate to the 4m amateur band.



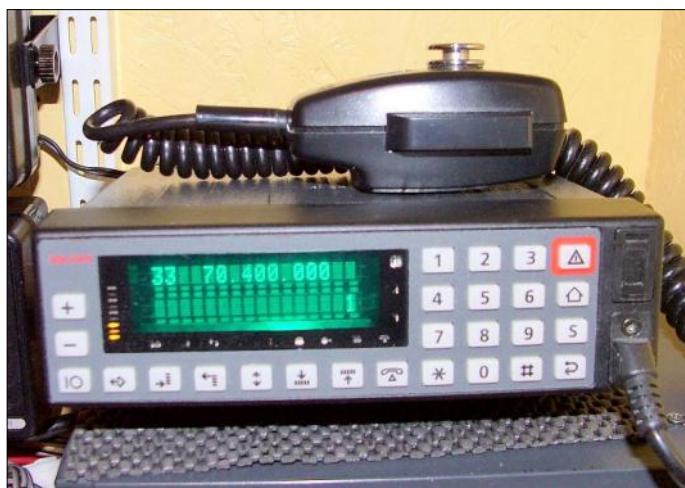
In addition to the traditional users (United Kingdom, Gibraltar and the British Military Bases in Cyprus), an increasing number of countries in Europe and Africa have also allocated the 4m band to radio amateurs as a result of the decline in VHF television broadcasts on the 4m band.

Movement away from the old Eastern European VHF FM broadcast band and migration of commercial stations to higher frequencies have led to slow but steady growth in the number of countries where 4m operation is permitted.

Whilst not formally allocated at an ITU or Regional level, in Europe CEPT now recognizes the increased access to 70 MHz by radio amateurs with footnote 'EU9' which has helped underpin further growth. In July 2015 CEPT updated this footnote to fully recognize it as a formal secondary allocation:

*"EU9: CEPT administrations may authorize all or parts of the band 69.9-70.5 MHz to the amateur service on a secondary basis."*

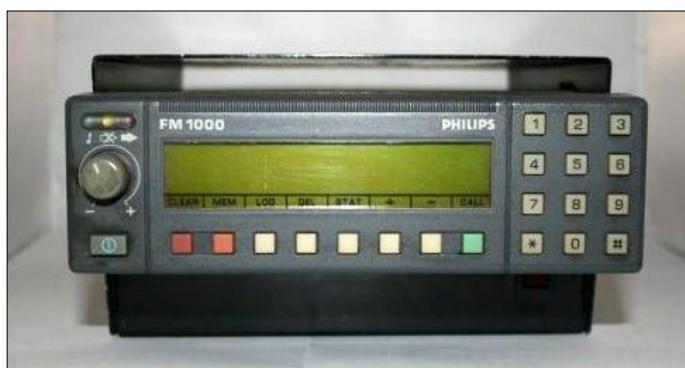
In practice this ranges from 70 to 70.5 MHz in the United Kingdom, with other countries generally having a smaller allocation within this window. In most countries the maximum power permitted on the band is lower than in other allocations to minimize the possibility of interference with non-amateur services, especially in neighbouring countries. A table with national and regional allocations is published and regularly updated on the Four Metres website.



Ascom SE550

### Propagation

The 4m band shares many characteristics with the neighbouring 6m band. However, as it is somewhat higher in frequency it does not display the same propagation mechanisms via the F2 ionosphere layer normally seen at HF which occasionally appear in 6m, leastwise not at temperate latitudes. However, Sporadic E is common on the band in summer, tropospheric propagation is marginally more successful than on the 6m band, and propagation via the Aurora Borealis and meteor scatter is highly effective. While Sporadic E permits Europe wide communication, it can be a mixed blessing as the band is still used for wide-bandwidth, high-power FM broadcasting on the OIRT FM band in a declining number of Eastern European countries. Although this has lessened in recent years, it can still cause considerable interference to both local and long distance (DX) operation.



Philips FM1200

The first trans-equatorial propagation (TEP) contact on 70 MHz took place on 28 March 2011 between Leonidas Fiskas, SV2DCD, in Greece and Willem Badenhorst, ZS6WAB, in South Africa.

Access to the 4m band has always been limited by access to suitable transceivers. A limited number of transceivers were purposely built for amateurs on this band while converted Private Mobile Radio equipment is in widespread use e.g. Phillips FM1000 and the Ascom SE550. Some low power FM commercial equipment is available for the band although it is of relatively simple specifications as generally suitable for communication of up to around 50 km (30 miles) or so with simple antennas.

In the Sporadic E seasons communication around Europe is possible with such equipment. Currently, the only Japanese-made, "mass-market" amateur radio transceiver to cover the four meter band as standard is the Icom IC-7100, previously there was the UK specification Yaesu FT-847 which was discontinued in 2005. As a result, many 4m users gain access to the band by using converted "Low band" VHF ex-PMR (Private Mobile Radio) transceivers but invariably these



*Clansman PRC 351*



*Philips RT 4600VRC*

only have either AM or FM. Users who prefer a multi-mode capability but can't afford a second-hand Yaesu FT-847 normally use transverters, either purposely built home builds or sometimes even converted 6m or 2m versions.

In recent years there have been extensive imports of Chinese PMR transceivers such as the Wouxun KG-699E 4m (66-88 MHz) and KG-UVD1P1LV DUAL BAND (TX/RX 66-88 MHz / 136-174 MHz) handheld to Western countries mainly so far in the UK and mainland Europe. Qixiang Electronics, the makers of the AnyTone and MyDel transceivers, have exported the AnyTone 5189 PMR 4m mobile, and the AnyTone 3308 handheld (66-88 MHz) transceivers from China to the UK and to Europe. Both rigs have been selling extensively well in the UK and in Europe.

Recently (2014) a monoband multimode 70 MHz SSB/CW transceiver was released by Noble Radio - [www.nobleradio.eu](http://www.nobleradio.eu).

### Activity

In some parts of the UK the band is little utilised, while in others, notably Belfast, Bristol, South Wales, North London and Hertfordshire, there is extensive local FM operation. There is considerable 4m activity along the east Coast of Ireland, mainly 70.400 FM. Also there are a number of gateways/links and repeaters now operating on 4m which can be a handy form of FM beacons. As band occupancy is relatively low, FM operation tends to take place on the calling frequency, 70.450 MHz, and AM operation on that calling frequency, 70.260 MHz. In the UK, the band is also used considerably for emergency communications, Internet Radio Linking Project links (IRLP), data links and low-powered remote control.

In continental Europe the band is still primarily used for more serious DX operation. Cross-band working between the 6m and 10m bands is common to make contacts with countries where the 6m band is not allocated.

*(continued on Page 26)*



# IARU Matters

## Seán Nolan EI7CD



### New 5 MHz Allocation

At the Sixth Plenary of WRC-15 held on 18 November the proposal for a new secondary allocation to amateur radio at 5 MHz passed both 1st and 2nd readings.

This effectively ends the four-year trek to bring Agenda Item 1.4 to fruition. The changes to the Radio Regulations authorizing the new band will appear in the WRC-15 Final Acts which will be available provisionally at the end of next week and in a formal document some weeks later.

The changes are tentatively expected to be effective 1 January 2017. Hopefully earlier use may be allowed by national administrations as happened with the extended 7 MHz band some years back. The new allocation is for 15 kHz between 5351.5 and 5366.5 kHz and a power limit of 15 watts e.i.r.p. would apply.

The smaller-than-hoped size of this allocation, the unusual band edges and the modest power limit reflect the painful compromises that over twenty hours of stressful negotiations resulted in. It is worth reflecting that, with both the U.S. and Russia committed to "no change" along with a couple of dozen more countries, the outcome defied the odds.

(from Page 25)

#### Countries in which 4m operation is permitted:

Bahrain (69.900-70.400 MHz)  
Belgium (69.950 MHz center frequency, 70.190-70.4125)  
Bulgaria (70-70.5 MHz)  
Croatia (70.000-70.450 MHz)  
Czech Republic (70.100-70.300 MHz)  
Denmark (69.9875-70.0625, 70.0875-70.1125, 70.1875-70.2875, 70.3125-70.3875 and 70.4125-70.5125 MHz)  
Estonia (70.140-70.300 MHz)  
Faroe Islands (69.950-70.500 MHz)  
Finland (70.000-70.300 MHz)  
[Åland Islands]  
Greece (70.200-70.250 MHz)  
Greenland (70.000-70.500 MHz)  
Hungary (70.000-70.500 MHz)  
Ireland (Republic of) (70.125-70.450 MHz)  
Italy (70.0875-70.1125, 70.1875-70.2125 and 70.2875-70.3125 MHz)  
Luxembourg (70.150-70.250 MHz)  
Monaco (70.000-70.500 MHz)  
Namibia (70.000-70.300 MHz)  
Netherlands (70.000-70.500 MHz)  
Norway (70.0625-70.0875, 70.1375-70.1875, 70.2625-70.3125, 70.3625-70.3875 and 70.4125-70.4625 MHz)  
Poland (70.1-70.3 MHz)  
Portugal (70.1570-70.2125 and 70.2375-70.2875 MHz)  
[Azores, Madeira]  
Romania (70.000-70.300 MHz)  
Slovakia (70.250-70.350 MHz)  
Slovenia (70.000-70.450 MHz)

### Incoming QSL Bureau

The International Amateur Radio Union (IARU) recommends that national societies should, where possible, provide an incoming QSL bureau service to non-members, and IRTS has had this facility for some time.

The QSL Inwards Bureau service provided by officers of IRTS is primarily a service for members. However, in accordance with the recommendation from IARU, non-members can avail of this service by making arrangements with the relevant QSL Sub-Manager. Under these arrangements, the non-member would be required to provide envelopes along with appropriate postage costs to the QSL Sub Manager.

See [www.irts.ie/qslinfo](http://www.irts.ie/qslinfo) for information about the IRTS QSL service and links to contact details.

### Outgoing QSL Bureau

**Tony Baldwin EI8JK  
Rathlin, Kilcrohane,  
BANTRY, County Cork.**

Somalia (70.000-70.500 MHz)

South Africa (70.000-70.300 MHz)

Spain (70.150 and 70.200 MHz)

UAE (70.000-70.500 MHz)

United Kingdom (70.000-70.500 MHz)

[Gibraltar, Guernsey, Isle of Man, Jersey, St. Helena]

#### Countries with past or current experimental operation

In "experimental" countries, authorities authorized amateur radio experiments on the band for a limited period of time.

Germany (69.950 MHz centre frequency)  
Sovereign UK bases in Cyprus (70.000-70.500 MHz)

#### Other

The United States has one experimental transmitter in Virginia transmitting CW on 70.005 Mhz. Call sign is WE9XFT.

Glen Zook, K9STH, the Head Moderator of QRZ.com and a longtime magazine writer on VHF related topics, filed a petition with the U.S. Federal Communications Commission on 27 January 2010 to create a new U.S. 4m amateur radio allocation at 70 MHz to parallel those in Europe and other parts of the world. This petition was subsequently rejected by the FCC.

#### Common uses of the 4-meter band

FM Simplex  
AM Simplex  
Packet radio  
SSB voice operation  
Morse code (CW) operation  
DX



# Global Overlay Mapper

## Tim Makins EI8IC

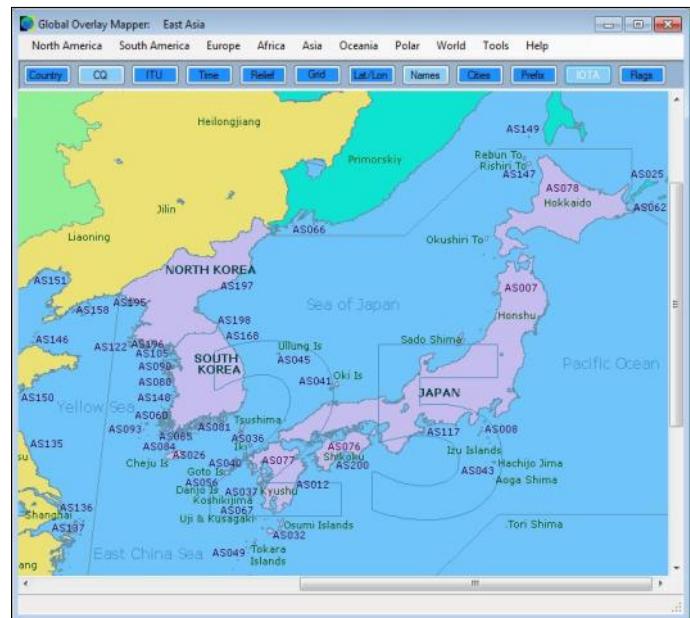
GOM, the Global Overlay Mapper, is a suite of one world map, eight continental maps and twenty nine sub-continental maps of varying sizes. More than just a static map, GOM combines twelve different overlays with an easy-to-use navigation system that can select and load a map from a single click. [www.mapability.com/ei8ic](http://www.mapability.com/ei8ic)

In addition, every map has real-time mouse tracking, that displays continuous positional and grid-locator information on the status bar, plus instant beam headings and distance display, customised to your home location. Also, every IOTA entity is mapped and searchable - its the only ham radio mapper to do so! I have re-written the GOM as a proper Windows application, and added a lot of new features.

The latest version also incorporates an easy-to-use Feature-Locate system - jump to a position on a map from a full list of prefixes, capital cities, country names, admin areas, IOTA groups, and over 2500 major cities. The GOM is up-to-date with all the latest countries, prefixes, flags and IOTA groups. You can now plot your ADIF or Cabrillo log on a map, and geocode it online. You can do callbook-lookups, and plot those on a map as well, see real-time NCDXF Beacon transmission schedules, and plot the beacons.

## **Who is it for?**

The GOM is ideal for every ham, no matter where their special field of interest might be. The local ragchewer, the HF and VHF DXer, international or local contester, field day team, emergency communications specialist, DXCC and award hunter, IOTA expeditioner, will find the Global Overlay Mapper an important tool for everyday use.



*Three overlays are visible here: CQ Zones, Country & Admin Area Names, and IOTA Reference Numbers.*

## **What can it do ?**

The GOM not only places all the world-wide mapping resources for an operator in one handy package, it makes it quick and easy to find the information you are looking for. The 1 or 2-click map-loading interface means never having to waste vital seconds looking for the answers you need. You can download the fully working package, and register it if you wish - it's entirely optional.

**The 105ft Rotatable Tower at Contest Station EI7M in Co. Cork - with a 2-el 40m Beam on top**





## Contest News

Joe Ryan EI7GY

contestmanager@irts.ie

### IRTS Contest Results

Results of two IRTS contests have been published since the last issue of Echo Ireland: the August 2-Metres Counties Contest and SSB Field Day.

#### August 2-Metres Counties Contest:

Sixteen station logs were submitted for this contest, which included QSOs from twenty four 24 of the thirty two EI/GI counties. The section winners are shown in the table on Page 29 opposite. We often say that these short local contests are a great way for new licensees to gain experience, so it was good to see that among the section winners was newly-licensed Niall EI6HIB, operating from Kippure, Co. Wicklow.

#### SSB Field Day:

Field Day contests have, for many years, been attracting a small number of entries. In an effort to encourage more individuals and groups to become involved in field day contesting, this year we introduced a new 6-hour section for SSB Field Day. While there were two entries in the new section, we had just six entries in all for this year's contest. HF band conditions were very poor for the whole weekend, reflected in a total of just three QSOs on 10m and 150 QSOs on 15m from the six station logs submitted. In spite of the poor conditions, Avondhu Radio Club logged almost 900 QSOs, a great performance. See the section winners on Page 29 and the full results on the IRTS web site.

### 2016 Contest Calendar

Our first contest of the year is on New Year's Day. The January 80m Counties Contest has traditionally been well supported, and we hope that this tradition will continue into 2016. There are separate Fixed and Portable sections, each with SSB only and mixed-mode (SSB/CW) options, as well as an SWL section. To encourage more CW in the mixed-mode sections, we have suggested a *CW centre of activity* at 3522 kHz. Also, there is a final score bonus of 1,000 points for any entry that includes at least 10 valid CW QSOs with EI or GI stations. Worth spending a bit of time in the CW end of the band?

Below is our calendar for the full year. See the IRTS web site for links to the relevant rules for each contest.

The 2016 calendar introduces a few changes, specifically two new **80m Evening Counties Contests** (February and November), the Summer 80m Counties Contest is dropped, but we have a new **40m Counties Contest**, in October. The rules have also been updated, the principal change being that the requirement to pre-register Field Day stations has been dropped. Contestants are, of course, expected to adhere to the rules and spirit of each contest and to operate within the terms of their licence.

Not everyone likes contests, but we hope that some of those who would not see themselves as "contesters" will consider joining in some of our counties contests. These short local

Contest	Date	Start	Duration	Mode(s)
<b>80m Counties</b>	Fri 1st Jan	14:00 UTC	3 hours	SSB CW
<b>80m Evening Counties</b>	Tue 9th Feb	20:00 UTC	1 hour	SSB
<b>2m Counties</b>	Mon 28th Mar	2.00 pm local	2 hours	FM SSB
<b>40m Counties</b>	Sun 8th May	12:00 UTC	3 hours	SSB CW
<b>CW Field Day</b>	Sat/Sun 4/5 Jun	15:00 UTC	24 hours	CW
<b>VHF/UHF Field Day</b>	Sat/Sun 2/3 Jul	14:00 UTC	24 hours	CW SSB FM
<b>2m Counties</b>	Sun 28th Aug	2.00 pm local	2 hours	FM SSB
<b>SSB Field Day</b>	Sat/Sun 3/4 Sep	13:00 UTC	24 hours	SSB
<b>40m Counties</b>	Sun 9th Oct	12:00 UTC	3 hours	SSB CW
<b>80m Evening Counties</b>	Tue 8th Nov	20:00 UTC	1 hour	CW

contests are in some respects like *QSO Parties*, they are great fun and represent an ideal opportunity to meet others on the air and to test station performance and operating skill.

### Other Contests

The focus in “Contest News” is on IRTS contests, however I am happy to look at contest news for other contests, particularly where there is significant involvement by EI stations.

Perhaps the best example of “significant involvement by EI stations” is in the contests run by the United Kingdom and Ireland Contest Club (**UKEICC**), which was set up by UK and EI radio amateurs and has been in existence for just over a year. They have been running a series of one-hour 80m evening contests with distance based scoring (the contest exchange is the 4-character Grid locator) and a requirement to upload logs in Cabrillo format within one hour of the end of the contest; results are published very shortly afterwards. Currently, there are two contests each month, one each for CW and SSB. While most entrants are from EI or UK stations, a few continental Europeans have also been appearing in the logs, very welcome indeed for a distance based scoring event.

To date, the UKEICC contests have been largely local affairs, however the next **UKEICC DX Contest** takes place on 23/24<sup>th</sup> January (CW). See [ukeicc.com](http://ukeicc.com) for the full rules; it is worth noting that, to quote from the rules: “All UK and EI contestants, including those with modest stations and antennas, will experience the fun of being a ‘Multiplier’ in a worldwide contest”. Callers will expect you to know your 2-character county/district code – check the rules for yours.

Contests run by **RSGB** have always been well supported by EI stations, perhaps one of the most popular being the **IOTA contest**. Looking at the provisional RSGB Contest Calendar for 2016, I can see a few changes that will be of interest to EI radio amateurs:

The RoPoCo (rotating post-codes) contests – which were confined to UK stations – have been replaced by RoLo (rotating locators) contests, and non-UK stations are now invited to participate. The exchange will be a signal report plus the QRA locator received from the previous contact; an interesting test of operating and logging skills!

New international contests using the ‘Sprint’ format (i.e. when calling CQ, QSY after the QSO) are being introduced; these follow similar rules to the former popular European Sprints and will be four hour events on 80m, 40m and 20m on Saturday afternoons.

Some new Irish records were set in the **2015 CQ WPX SSB Contest** which took place over the last weekend of March. Firstly, in the Single Operator High Power All Band category, **Mark EI6JK** set a new Irish record with 2,654 QSOs and 1,017 prefixes. At the same time, **Declan EI9HQ** set a new record in the High Power 80m category, while **Bernard EI4II** also gained an Irish record with his QRP entry on 15m. These are just the stations that set a new Irish record, there were fifteen EI entries, with quite a few gaining a high European or World ranking.

Have other Irish records been set in recent contests? Please let me know, I’m always willing to highlight such achievements by EI stations. Photos of contest operations are also welcome: preferably involving a bit of action, like the one on Page 30 from the EJ1Y IOTA team

Joe Ryan EI7GY, Contest Manager

### Links:

Contest rules & calendar:	<a href="http://www.irts.ie/contests">www.irts.ie/contests</a>
Contest results:	<a href="http://www.irts.ie/results">www.irts.ie/results</a>
UKEICC contests:	<a href="http://www.ukeicc.com">www.ukeicc.com</a>

## IRTS Contests : Section Winners

<b>August 2 Metres Counties Contest (30 August)</b>	
High Power Portable (EI)	EI2SBC/P, Shannon Basin Radio Club
Low Power Portable (EI)	EI7GY/P, Joe Ryan
High Power Fixed (EI)	EI4CF, Niall Foley
High Power Fixed (Outside EI)	MI0RRE, Robert Rantin
Low Power Fixed (EI)	EI4KH, Denis O’Flaherty
FM Only (EI)	EI6HIB/P, Niall Donohoe
<b>SSB Field Day (5/6 September)</b>	
Open Section	EI1E/P, Avondhu Radio Club
Restricted Section / 24 hours	EI2KA/P, Tim McKnight
Restricted Section / 6 hours	EI3Z/P, Shannon Basin Radio Club

## New IOTA Foundation

Islands on the Air (IOTA) celebrated its 50th anniversary as a premier DX programme in July 2014.

The RSGB is pleased to announce that a new organisation will be formed and it will be called the IOTA Foundation. IOTA enthusiasts, who will manage the IOTA programme in partnership with the RSGB, will run it. A major task for the new organisation will be to develop a new online credit system that is due to be completed in 2017.



Members of EJ1Y, the Papa Lima DX Group, installing the Hexbeam on Ireland's Eye for the 2015 IOTA Contest

## IRTS Contest Logs

Contest results should be sent to [contestmanager@irts.ie](mailto:contestmanager@irts.ie)

Remaining paper logs should be sent to Joe EI7GY, QTHR

## EI DXCC Single Band Status as at 30th November 2015 Compiled by Joe Ryan EI7GY

		160	80	40	30	20	17	15	12	10	6	2
10	EI2JD	160	80	40	30	20	17	15	12	10	6	
10	EI3IO	160	80	40	30	20	17	15	12	10	6	
10	EI7BA	160	80	40	30	20	17	15	12	10	6	
10	EI9FBB	160	80	40	30	20	17	15	12	10	6	
9	EI2GLB		80	40	30	20	17	15	12	10	6	
9	EI6IZ	160	80	40	30	20	17	15	12	10		
8	EI6FR		80	40	30	20	17	15	12	10		
8	EI7GY		80	40	30	20	17	15	12	10		
8	EI9FVB		80	40	30	20	17	15	12	10		
7	EI1DG			40	30	20	17	15	12	10		
7	EI4BZ		80	40	30	20	17	15	10			
6	EI7JZ			40	20	17	15	12	10			
6	EI8IU				30	20	17	15	12	10		
5	EI4CF			40	20	17	15	10				
5	EI4GJB				20	17	15	12	10			
5	EI6AL				20	17	15	12	10			
5	EI6JK			40	20	15	12	10				
5	EI8GS		80	40	20	15	10					
5	EI9E		80	40	20	15	10					
5	EI9JF			40	30	20	17	15				
4	EI3GV				20	17	15	10				
4	EI9GLB				20	17	15	10				
3	EI3CTB				20	15	10					
3	EI4GK				20	15	10					
3	EI4GNB				20	15	10					
3	EI4HH				20	15	10					
3	EI6HB				20	15	10					
3	EI7GL			40						10	6	
3	EI9HQ				20	15	10					
2	EI2II				20						10	
2	EI5IF					20	15					
2	EI7JN					20	15					
1	EI3EBB										6	
1	EI3HA						20					2
1	EI4DQ											
1	EISEV										10	
1	EISFQB							20				
1	EI5GSB							20				
1	EI6S							80				
1	EI7IG								20			
1	EI8IQ								20			
1	EI9CJ										10	

160 80 40 30 20 17 15 12 10 6 2

## IRTS AGM 2016 *hosted by Limerick Radio Club*

**9/10 APRIL 2016**

**Radisson Blu Hotel  
Ennis Road, Limerick**

**Information from  
Simon Kenny EI7ALB  
kenmare32@eircom.net**

# EI DXCC Listings - Compiled by Joe Ryan EI7GY

as at 30th November 2015

Entries in Bold Type show changes since 30th August 2015

<b>Mixed</b>	244	EI4BZ	215	EI6FR	198	EI7JZ	101	EI9HQ	<b>133</b>	<b>EI6FM (New)</b>	
365	EI8H (SK)	231	EI5GM	195	EI8FH	196	EI4BZ	<b>100</b>	<b>EI6FM (New)</b>	131	EI7GY
356	EI6S	230	EI7GY	<b>186</b>	<b>EI2GLB (+5)</b>	186	EI1DG			<b>123</b>	<b>EI9GLB (+8)</b>
353	EI7CC	211	EI1DG	<b>184</b>	<b>EI8IU (+12)</b>	<b>173</b>	<b>EI9E (+5)</b>	<b>12m</b>		116	EI3CTB
348	EI6FR	190	EI8JX	129	EI3CTB	171	EI7JN	322	EI7BA	112	EI4GJB
346	EI8EM	171	EI9FVB	121	EI6HB	<b>171</b>	<b>EI9GLB (+14)</b>	280	EI9FBB	111	EI4GNB
345	EI7BA	<b>169</b>	<b>EI7IG (+14)</b>	108	EI5IF	161	EI6JK	<b>192</b>	<b>EI8IU (+8)</b>	111	EI9CJ
340	EI2GS (SK)	168	EI4HH			161	EI7GY	185	EI9FVB	105	EI6HB
329	EI9FBB	153	EI7JZ	<b>160m</b>		145	EI6HB	172	EI6FR	104	EI3GV
326	EI3IO	127	EI9CF	244	EI7BA	144	EI4GJB	<b>154</b>	<b>EI2GLB (+12)</b>	103	EI9HQ
324	EI5GM	126	EI4BK	212	EI3IO	135	EI4HH	151	EI6AL	101	EI2II
320	EI9O	<b>115</b>	<b>EI9E (+5)</b>	140	EI6IZ	133	EI5IF	147	EI2JD	101	EI5EV
<b>317</b>	<b>EI2GLB (+6)</b>	113	EI2KK	138	EI9FBB	130	EI3GV	143	EI6IZ		
312	EI8FH	109	EI2IH	122	EI2JD	130	EI6AL	140	EI6JK	<b>6m</b>	
310	EI4II	109	EI4HM (SK)			126	EI3CTB	130	EI1DG	160	EI3IO
306	EI2HY	104	EI6HB	<b>80m</b>		126	EI3HA	118	EI7JZ	150	EI9FBB
306	EI4CF	100	EI3CTB	310	EI6S	118	EI9HQ	117	EI7GY	112	EI7BA
304	EI6IZ	100	EI3KE	293	EI7BA	117	EI4GNB	106	EI3IO	111	EI7GL
303	EI2CR	100	EI3KG	241	EI9FBB	<b>115</b>	<b>EI7IG (+8)</b>	100	EI4GJB	<b>108</b>	<b>EI2GLB (+3)</b>
296	EI2JD			166	EI2JD	<b>114</b>	<b>EI6FM (New)</b>			107	EI2JD
<b>291</b>	<b>EI8IU (+6)</b>	<b>Phone</b>	158	EI6FR	113	EI4GK	<b>10m</b>		101	EI3EBB	
291	EI9FVB	353	EI6S	142	EI3IO	112	EI8IQ	305	EI7BA		
287	EI9IF	351	EI7CC	136	EI6IZ	<b>106</b>	<b>EI5FQB (+3)</b>	282	EI9FBB	<b>2m</b>	
<b>274</b>	<b>EI9GLB (+16)</b>	346	EI8EM	119	EI4BZ	105	EI2II	257	EI3IO	145	EI4DQ
269	EI7JZ	343	EI7BA	<b>116</b>	<b>EI2GLB (+15)</b>	102	EI5GSB	<b>225</b>	<b>EI2GLB (+8)</b>		
269	EI8GS	338	EI2GS (SK)	108	EI7GY			217	EI6FR		
265	EI4BZ	336	EI6FR	<b>107</b>	<b>EI9E (+6)</b>	<b>17m</b>		199	EI4CF		
264	EI6AL	331	EI8AR	103	EI8GS	334	EI7BA	197	EI2JD		
262	EI2GX	319	EI9FBB	100	EI9FVB	301	EI9FBB	194	EI9FVB		
<b>248</b>	<b>EI1DG (+2)</b>	309	EI3GV			278	EI6FR	183	EI4BZ		
243	EI6JK	300	EI4GK	<b>40m</b>		218	EI6IZ	<b>182</b>	<b>EI8IU (+8)</b>		
237	EI7GY	300	EI8AU (SK)	316	EI7BA	<b>216</b>	<b>EI8IU (+10)</b>	173	EI6JK		
235	EI4HH	284	EI9FVB	254	EI9FBB	<b>200</b>	<b>EI2GLB (+12)</b>	171	EI8GS		
230	EI4GXB	<b>282</b>	<b>EI2GLB (+14)</b>	236	EI6FR	195	EI9FVB	<b>167</b>	<b>EI1DG (+1)</b>		
214	EI5IF	280	EI2JD	209	EI4CF	191	EI2JD	166	EI4HH		
210	EI6IL	275	EI4CF	205	EI6IZ	166	EI6AL	<b>165</b>	<b>EI9E (+5)</b>		
209	EI7JN	<b>274</b>	<b>EI9GLB (+16)</b>	202	EI2JD	163	EI7GY	159	EI6AL		
203	EI9E	269	EI8GS	185	EI3IO	162	EI4CF	159	EI6IZ		
193	EI3HA	264	EI9HX	<b>180</b>	<b>EI2GLB (+8)</b>	146	EI9JF	148	EI7JZ		
191	EI6HB	259	EI7JZ	177	EI9JF	<b>142</b>	<b>EI1DG (+2)</b>	144	EI7GL		
188	EI4IR	<b>256</b>	<b>EI8IU (+6)</b>	154	EI6JK	137	EI7JZ	136	EI4GK		
<b>187</b>	<b>EI6FM (+86)</b>	241	EI6JK	139	EI4BZ	129	EI3IO				
177	EI9HQ	225	EI9JF	<b>134</b>	<b>EI9E (+7)</b>	127	EI4GJB				
<b>175</b>	<b>EI7IG (+11)</b>	222	EI8FH	130	EI7JZ	<b>120</b>	<b>EI9GLB (+9)</b>				
174	EI3CTB	213	EI7GL	129	EI8GS	110	EI4BZ				
165	EI5EV	212	EI4HH	120	EI7GY	108	EI3GV				
<b>160</b>	<b>EI4GZB (New)</b>	209	EI4BZ	118	EI9FVB						
158	EI4GNB	208	EI4GJB	117	EI7GL	<b>15m</b>					
<b>136</b>	<b>EI5FQB (+5)</b>	200	EI6IL	<b>111</b>	<b>EI1DG (+1)</b>	331	EI7BA				
136	EI9CN	<b>198</b>	<b>EI9E (+2)</b>			299	EI9FBB				
135	EI9CF	191	EI3HA	<b>30m</b>		297	EI6FR				
131	EI5GSB	188	EI2CH	327	EI7BA	251	EI4CF				
129	EI5GUB	186	EI7II	254	EI9FBB	<b>237</b>	<b>EI2GLB (+20)</b>				
128	EI8HA	185	EI6AL	231	EI6FR	233	EI9FVB				
127	EI9CJ	<b>184</b>	<b>EI6FM (+83)</b>	223	EI3IO	231	EI2JD				
116	EI6CPB	177	EI5IF	220	EI6IZ	<b>224</b>	<b>EI8IU (+12)</b>				
115	EI5JQ	177	EI9FE	167	EI9JF	208	EI6IZ				
104	EI9GWB	171	EI9HQ	156	EI7GY	204	EI3IO				
103	EI3HDB	160	EI2II	<b>135</b>	<b>EI2GLB (+10)</b>	202	EI4BZ				
101	EI7JQ	160	EI6HB	124	EI2JD	193	EI6JK				
101	EI8JB	143	EI3CTB	120	EI4BZ	181	EI8GS				
100	EI3GAB	137	EI4GNB	<b>119</b>	<b>EI8IU (+4)</b>	<b>179</b>	<b>EI9E (+2)</b>				
100	EI4HQ	<b>136</b>	<b>EI5FQB (+5)</b>	<b>102</b>	<b>EI1DG (+2)</b>	<b>178</b>	<b>EI1DG (+2)</b>				
100	EI8KF	134	EI9CN	102	EI9FVB	167	EI7JZ				
<b>CW</b>		116	EI6CPB	<b>20m</b>		151	EI7GY				
338	EI7BA	114	EI4EX (SK)	339	EI7BA	148	EI4HH				
333	EI7CC	105	EI1CS	333	EI6FR	<b>138</b>	<b>EI9GLB (+9)</b>				
330	EI6FR	103	EI3HDB	321	EI9FBB	136	EI6HB				
314	EI9FBB	103	EI6GGB	257	EI2JD	122	EI3CTB				
305	EI8FH	102	EI1DG	256	EI4CF	120	EI4GJB				
300	EI6IZ	102	EI4DJB	251	EI3IO	119	EI4GNB				
293	EI4CF	101	EI3IP	246	EI9FVB	113	EI3GV				
<b>279</b>	<b>EI2GLB (+12)</b>	100	EI3GAB	<b>234</b>	<b>EI2GLB (+14)</b>	109	EI7JN				
279	EI2JD			229	EI6IZ	107	EI5IF				
<b>265</b>	<b>EI8IU (+10)</b>	<b>RTTY/Digital</b>	<b>218</b>	<b>EI8IU (+9)</b>	105	EI9JF					
253	EI9JF	297	EI7BA	217	EI9JF	104	EI4GK				
246	EI6AL	<b>224</b>	<b>EI1DG (+3)</b>	211	EI8GS	<b>104</b>	<b>EI7IG (New)</b>				

DXCC Honor Roll	
<b>Mixed</b>	<b>Phone</b>
340	EI6FR/348
340	EI7BA/345
338	EI7CC/353
338	EI8EM/346
337	EI6S/356
337	EI8H/365 (SK) <b>CW</b>
332	EI2GS/340 (SK)
334	EI7BA/338
DXCC Challenge	
2889	EI7BA
2500	EI9FBB
2006	EI6FR
1850	EI3IO
1729	EI2JD
1720	EI7CC
1714	EI6IZ
<b>1635</b>	<b>EI2GLB (+107)</b>
1466	EI4CF
1430	EI9FVB
<b>1306</b>	<b>EI8IU (+67)</b>
1160	EI7GY
1156	EI4BZ

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**For Sale:** (from the shack of the late Frank O'Brien EI2GS) - Kenwood HF transceiver TS-940 (ATU not working) €400. MFJ-748B tuneable DSP filter, €60. Yaesu YM-33 desk mic, €25. MFJ 940D Versa Tuner, €25. Alinco DR-1200 VHF transceiver €50. AEA PK-900, €20. Coax Surge Protector, €20. Yaesu FL-2050 2m 80W amp, €40. Daiwa CN-1011 meter, €40. SEM VHF Transmatch, €25. Datong Morse Tutor, €25. Diamond SX-2000 meter, €30. Kenwood TR-3600 handheld – no charger, €40. Tony EI3GU 086 232 2454 or Sean EI4GK 01 282 1420

**For Sale:** TennaMast 30 foot wind-up mast (wall support) €475. Magloop

double (8 shape) HF magnetic loop antenna €375. Dave EI7BFB 086 332 1159 or ei7fbf1@eircom.net

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